The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees.

VOL. XXXIX. CHICAGO, ILLINOIS, AUGUST 30, 1902. No. 9.

Original Articles.

THE REMOVAL OF FOREIGN BODIES FROM THE EYE.*

O. HAAB.

ZURICH, SWITZERLAND.

The treatment of injuries to the eye brought about by foreign bodies will always be an important and interesting domain of an oculist's work. For in such cases of injury we have to deal not only with the foreign body but very often with an infection of the eye induced thereby, that is to say, with a factor calling for the greatest circumspection and skill in the operator. He has a hard battle to fight, not being yet sure of victory, a battle for which he has still to seek and prove new weapons.

In well-known important operations on the eye, such as operations for cataract and glaucoma, we have decided rules to follow; they are stated in every text-book and manual. But this is hardly the case in the operations relative to and the treatment of injuries to the eye brought about by foreign bodies. It is even still a matter of discussion how foreign bodies in general and iron-splinters in particular are best removed from the eye. Moreover, our knowledge of the treatment advisable in the case of infection of the eye by the foreign body is not extensive as yet. There is particularly great diversity of opinion as to whether a foreign body in the one eye must of necessity endanger the other eye and which cases are free from this danger.

TWO GROUPS OF CASES.

In the first place, with regard to the removal of foreign bodies from the eye, in practice we distinguish two groups of cases. First, those arising from iron splinters, and secondly, those caused by other materials. Injuries from iron particles are by far the most frequent. In my own circle of observation they form three-fourths of all important cases of injury caused by foreign bodies penetrating deeply. Stone, wooden and glass particles enter the eye much more rarely and remain lodged in the front portion of the eye more frequently than is the case with iron. Copper splinters, on the other hand, have in general great force in flight, but are fortunately of rarer occurrence than iron splinters and are also less frequently met with, since children are nowadays not so much tempted to play with copper caps.

BODIES THAT ARE NOT IRON.

The group of foreign bodies not iron are, as you are all aware, much more difficult of removal than iron splinters. With regard to these splinters I make the following deductions: It is often more advisable to leave these particles in the eye instead of opening the vitreous body by too large a wound and probing with forceps and other instruments in search of the foreign body. I have witnessed several cases in which copper splinters could be left in with comparatively little harm to the eye; their removal would have at any rate damaged the eye more than their being allowed to remain.

DESMARRES' CAPSULE FORCEPS.

True to my principle of sparing the vitreous as much as possible in all operations on the eye, I would draw your attention to an instrument which many of my esteemed hearers probably only know by name, which I have, however, used successfully for the extraction of other than iron foreign bodies. I refer to Desmarres' capsule forceps. Its introduction into the vitreous only causes a very slight wound and injures the vitreous body as little as possible. But it is only suitable for the cases in which the splinter is free and visible in the vitreous, and can be reached by this instrument by the aid of the ophthalmoscope, or, better, a forehead mirror, as Dr. Knapp used it in similar operations performed with his grooved hook. In this way I removed a small copper splinter from a boy's eye, but convinced myself only too well how difficult it is to lay hold of any fragment in the vitreous with forceps. It escaped me some six times before I managed to grasp it at last. The healing process was, however, very successful, and years after the patient's eye was in good condition.

In a former case of the same nature I had extracted a copper splinter from the vitreous body with forceps as gently as possible. The eye healed in the same satisfactory way and with normal vision, but four years later detachment of the retina set in in consequence of the vitreous having been injured too severely by the forceps.

IRON SPLINTERS.

The diagnosis and removal of iron splinters from the eye is much more successful. We possess now in the *x*-rays, the magnetic needle (sideroscope) and the large magnet good means for the diagnosis and localization of these foreign bodies in the eye. Small splinters 1 mm. and less are not indicated with certainty by the *x*-rays. As for Asmus' sideroscope, Knapp's remark is excellent. This instrument, he says, is a marvel of delicacy, but to handle it requires the patience of a saint. I may add, it requires, moreover, a place out of the influence of strong electric currents, except it be used at night, when trams do not run. Somewhat less sensitive and therefore convenient is Hirschberg's simplified sideroscope, which I also possess. But in my experience it does not indicate very small splinters either. These two instru-

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee: Drs. Frank Allport, H. V. Würdemann and J. A. Lippincott.

ments and the magnetic needle can be almost dispensed with since the large magnet offers great advantages, both for the diagnosis of the splinters and for their extraction. This instrument makes it unnecessary to localize the splinters exactly.

USE OF THE MAGNET.

Localization is chiefly needed when the small magnet is used to bring it into as close contact as possible with the foreign body so as to seize it. In my opinion the right principle of use for the magnet is the attraction of the iron foreign bodies from a distance. It is just its power from a distance which gives it its full worth, for it allows of the removal of iron foreign bodies from the eye without the vitreous being injured by the entrance of the magnet. The small electro-magnet, which I also used to employ for seizing splinters in the vitreous body, should no longer be used for this purpose, or at least only for removing splinters from the anterior chamber, in which case it acts better than forceps. But for years I have, as a rule, used the large magnet for the extraction of iron splinters even from the anterior chamber.

This very day, ten years ago, a woman was struck in the crystalline lens of the eye by a chip of iron, and I had an opportunity, July 2, of finding a way to extract splinters lodged deeply in the eye by the magnet working from a distance. Without knowing the two similar cases in which McHardy and Hill Griffith had drawn, ten years before, iron splinters from the crystalline lens into the anterior chamber, I used for this woman a large Ruhmkorff electro-magnet in order to draw the splinter lodged in the back of the lens into the anterior chamber. On the other hand, I was aware of the case in which Knies, twelve years previously, operated on a splinter located behind the iris and succeeded in drawing it into the anterior chamber by the aid of this same large magnet.

But whilst Knies limited from the very first this method to the cases in which the splinter was seated in the front part of the eyeball and not firmly embedded there, I, having discovered the great effect from a distance of a very strong magnet, proceeded at once a step further. I soon convinced myself that even splinters seated deep in the vitreous body, or even in the retina, followed the attraction of the large magnet easily, circumstances being favorable.

ORIGINATION OF THE LARGE MAGNET.

First I constructed a suitable magnet, allowing of the perfect execution of the operation, that is to say, an instrument allowing me to see exactly all I did and, given a good light, to survey the eye to be operated on clearly. At the same time I kept to the principle from the very first that the magnet must be as strong as possible. And this principle turned out to be a correct one. I only set about constructing the instrument after a careful study of the matter. The consequence was that having reported at Heidelberg the result of my first operations Schlösser got the start of me in the construction of a large magnet. I regret this, because Schlösser's magnet is too small in a great many cases, but nevertheless is much used in Germany because of its low price. On the other hand, I am happy to say, that in America the large magnet has been quickly and widely adopted.

The form and construction of my instrument is known to you from Oliver and Norris' "System of Diseases of the Eye." My manner of using the instrument is best seen in these photographs.

TECHNIC WITH THE MAGNET.

You perceive that I close the current with my foot, by means of a switch on the lower part of the instrument. I added this improvement to my instrument several years ago, and attach the greatest importance to it. It allows an instantaneous putting out of action of the magnet and permits a rapid closing of the current at the right moment.

As I and my assistants have applied this method in 165 cases for the extraction of iron splinters from the eye, I can, on the ground of this pretty large experience, recommend the following mode of proceeding: In some points I enlarge on the explanations given by H. Knapp in his excellent treatise on eye operations as to my method in the above-mentioned "System of Diseases."

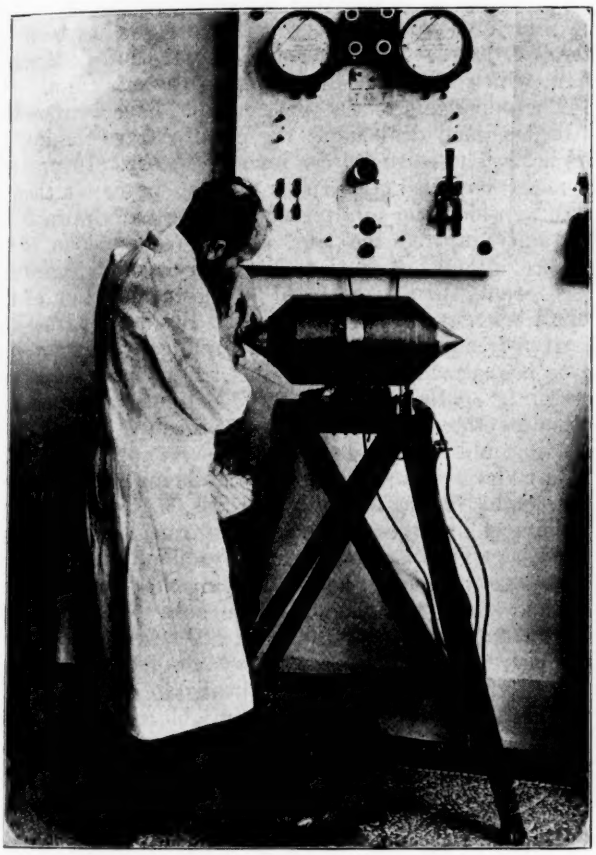
The patient's eye should, as a rule, be brought in such a position to the instrument that the point of the mag-

net is opposite the middle of the cornea. For, above all things, we must avoid drawing the splinter into the ciliary body, from whence it is very difficult to bring it further forward. It is only when we must assume that the foreign body is so large that in drawing it backward toward the middle of the anterior chamber it might closely graze and injure the crystalline lens that we should bring the lateral part of the cornea opposite the magnet. But since in the majority of cases the lens has been already injured by the entrance of the splinter, such consideration for the lens is of no great importance.

PATH OF THE BODY'S EXIT.

It generally occurs, then, that a splinter located in the space of the vitreous body or in the retina is drawn forward either quickly or slowly and slides around the

lens. It follows in the direction where it finds the least resistance. It also pierces with the greatest facility the zonula Zinni and appears behind the iris, which it causes to bulge out a little. This bulging of the iris must be at once noticed by the operator, for he must as quickly as possible open the electric current or rapidly push back the patient's head. The splinter must not penetrate the back side of the iris, but must be drawn obliquely through the pupil into the anterior chamber. If it is, therefore, behind the temporal part of the iris, the patient must look in that direction, and if the pupil has been put under the influence of atropin and cocain before the operation, it is generally possible without much difficulty to draw the splinter from behind the iris and through the pupil. But this part of the operation demands all the skill and attention of the operator and a certain amount of patience. He should never hope or intend to extract the splinter



through the iris. It would not succeed at all with small splinters, and large ones would tear the iris too much.

COMPLICATIONS.

If in extracting a splinter it stuck fast behind the peripheric portion of the iris, from whence it is very difficult to draw it to the pupil. I several times proceeded in the following manner: I made a little lance incision at the point of the margin of the cornea where the splinter was, introduced the iris-forceps into the anterior chamber and seized the iris as in iridectomy. But I did not draw it towards the incision, but rather pushed it toward the side of the anterior chamber opposite to the foreign body. This resulted in a small irido-dialysis in front of the foreign body through which, when the point of the large magnet was lightly inserted in the wound, it could slip through and reach the magnet. The dialysis of the iris healed in the course of a few days.

If the foreign body will not let itself be drawn from behind the iris and through the pupil into the anterior chamber it is not necessary to have recourse to iridectomy, but you can penetrate into the anterior chamber best by a sufficiently large incision with the smallest point of the small magnet and draw out the splinter by pushing the magnet point behind the iris. You accordingly make the incision through the cornea opposite the foreign body, for instance, in the nasal half if the splinter lies behind the iris toward the temples. I have not, however, applied the small magnet in this way of late years, but have, as a rule, drawn the splinter through the pupil into the anterior chamber.

PRECAUTIONS TO BE TAKEN.

No chip of iron of any real size lying at the back of the iris should be drawn with the large magnet so as to open the anterior chamber and to try to bring it through the iris and out by the wound in the cornea, for in so doing the splinter might tear out the whole iris or a great part of it. If the splinter is long its point, at least, must lie in the anterior chamber if you would wish to extract it with the large magnet directly through the incision in the cornea.

The splinters, having been drawn through the pupil into the anterior chamber, can be entirely extracted by an incision made at some convenient spot in the cornea corresponding in size with the splinter. For this purpose it is best to make use of Gräfe's cataract knife, which should pierce the cornea as perpendicularly as possible. The aqueous humor must not flow out. Then the more pointed end of the large magnet is pushed a very little into the cut, and when the current is closed, as a rule, the splinter is quickly seized by the magnet. This last stage in the operation often calls for patience and careful thought. If there is a rather large-sized splinter in the anterior chamber you must take care at this point that it does not injure the lens. It ought to be kept as far as possible in front of the iris and not be allowed to get into or near the pupil.

If the wound made by the entrance of the foreign body is in the cornea, within three or four days after the accident you can generally extract it through this wound if its position is favorable, that is to say, not too peripheric. So that you can often use the point of entrance as the point of extraction. In my 165 cases the splinter entered the globe through the cornea 133 times, 12 times it remained sticking in the cornea. Only 17 times did it enter through the sclerotic.

When first employing the magnet I was of the opinion that the foreign body must be extracted by exactly the same way as it took on entering. I relinquished this view long ago. Even splinters which enter through the sclera are better drawn into the anterior chamber, and it is advisable to leave the wound in the sclera alone, so as to avoid further damage to the vitreous. It is much more difficult to extract a splinter through the sclera than through the cornea because in operating on the sclera you can not see what is going on. To perform an operation without seeing clearly what you are doing is always a risky thing and is best avoided. It is also clear that the foreign body finds its way out more easily through the cornea than by the channel of a wound passing through the retina, choroidea and sclera.

REMOVAL FROM THE RETINA.

If a splinter has penetrated into the retina the work of extraction must not be discontinued too soon and

the strength of the current must often be raised to the highest pitch. Splinters often are lodged in the retina; in my 165 cases this was 34 times the undoubted fact; 28 of these foreign bodies lodging certainly in or on the retina could be removed by the magnet. In such a case if the splinter does not soon appear behind the iris or in the anterior chamber, and if it has been ascertained by the ophthalmoscope where it is lodged you may first try carefully to draw it sideways. For instance, if the splinter is located near the back pole, you may draw it first toward the equator of the eyeball and from there toward the front. Only you must carefully avoid drawing it too much into the wall of the globe at the equator, otherwise it would be difficult to remove it from there. Therefore, when applying the point of the magnet at the equator, if the patient shows signs of a painful sensation, the current must be opened and the head pushed back.

OPHTHALMOSCOPIC OBSERVATION.

In many cases it is advisable to follow the extraction of a splinter in the retina with the ophthalmoscope. For this reason I have a gas lamp close to the magnet, to be used also in dark weather, for lighting up the field of operation. But of late I have used for the latter purpose most advantageously a small electric lamp giving a very strong light.

The ophthalmoscopic observation of an operation with the magnet is not only useful but interesting. I have often watched the splinter detaching itself quite gradually from the retina or from the slight exudation which made it stick to the retina and coming slowly forward through the vitreous. The greater the amount of exudation which has collected round the splinter the more difficult is the extraction, and it is most likely to fail in cases of suppurating inflammation.

When a splinter does not easily respond to the attraction of the magnet it is necessary to close the current at once and to give the foreign body a vigorous shake. In obstinate cases the eye may be moved gently to the right and to the left, so that the magnet may act from different directions on the splinter.

If a splinter has been drawn by an unintentional movement of the eye into the ciliary body it is advisable to draw it first backward toward the equator, or, if practicable, toward the back pole of the eye, and only then toward the front.

REASONS FOR FAILURE.

Following these rules you will generally succeed in extracting the splinter from the eye, even if it is lodged in the retina. Of the whole number of 165 cases in my experience the operation only failed 23 times. The operation was successful in 141 cases, or in 86 per cent. If we consider the 134 difficult cases in which the splinter penetrated behind the iris and the lens, we find that in these 134 cases the large magnet only failed 23 times to extract the splinter from the eye, and was successful in 111 cases, or 83 per cent. These failures were due to the following circumstances:

1. The foreign body was seated too firmly in the back wall of the globe or had pierced it completely.
2. The splinter was seated in the ciliary body at first or was drawn there by mistake.
3. The splinter had produced fibrinous-purulent exudation which, according to my experience, greatly hinders its movability.
4. The splinter had been healed over in the course of months or years.

In the case of a splinter which stuck fast in the back nasal wall of the eyeball and would not follow the attraction of the magnet and yet could be seen very clearly through the ophthalmoscope, I proceeded as follows: I introduced a reclination needle into the vitreous on the lateral side of the globe in the neighborhood of the equator. Using the ophthalmoscope all the time, I brought the point of the needle into contact with the splinter and loosened it therewith, so that it could be withdrawn by the large magnet and removed from the eye. This somewhat difficult operation is only suited for certain cases. In a second similar case I did not choose this mode of procedure, because the splinter was near the optic-disc below a large retinal vessel, which might have been torn by the needle. After four years' time and after removal of the cataract this patient still had 1/6 of normal sight, so he bore the splinter well.

CONTRA-INDICATIONS.

Splinters long healed over at the back of the eye and causing no inconvenience to the eye had better not be interfered with, especially if the sight has been severely injured. The extraction might cause inflammation, which would mean danger to the other eye.

The opponents of the large magnet have written and talked a good deal about the great risk to the eye by its use. These are merely fears in theory. In practice I never observed any risk. I have never watched a case in which the splinter when being withdrawn for a certainty injured the lens, and if it had done so by chance, in my estimation the injury would have been less serious than that caused by the introduction of the small magnet into the vitreous. Besides, in the majority of cases, the splinter, in forcing its way into the eye, has already damaged the lens. This happened certainly 80 times with my 165 patients, and in many other of these cases there was probably cataract too, but it could not be seen.

Very large splinters, which when being rapidly drawn out might injure the lens and iris, are comparatively rarely met, and these large pieces of iron should be slowly removed. This is done by only gradually approaching the eye to the magnet and by keeping the eye at a certain distance from the magnet. The power of the magnet is thus considerably diminished. A rheostat to lessen the current for such cases is not absolutely necessary; you only need to choose the right distance between magnet and eye, or to attach any suitable piece of iron to the magnet and to finish the operation with this much weaker prolongation of the magnet.

ONE MAGNET SUFFICIENT.

But it is by no means necessary to follow Hirschberg's advice and to keep three magnets in the operating room, viz., a small one for large splinters, a middle-sized one (Schlösser's) for ordinary splinters and a very large one for small splinters. This is a theoretical expensive combination, which reminds me of the story of the woman who was the happy possessor of two cats, a big one and a small one. So that both might come in and out through the door easily she had two holes cut in the lower part of the door, one large and one small.

In my last 38 operations I have never once used the small magnet. In the last 120 successful cases I employed the small magnet but three times, and in all the 141 successful cases only thirteen times. Schlösser's middle-sized one can be entirely dispensed with, according to my opinion, but a large one, as large as possible, is absolutely necessary, since the majority of the splinters which penetrate into the eye are small,

and since the giant magnet can be easily weakened, as before indicated.

THE AUTHOR'S STATISTICS.

With respect to the results obtained in the 165 cases I treated, I will only mention shortly the following facts: As already stated, the splinters were extracted from 141 eyes. This number gives us a correct idea of the usefulness of the instrument, and is, as you see, very favorable. The numbers, however, which tell us how many eyes were preserved for use by the operation, or at least were saved from enucleation, are influenced by a factor independent of the method of extraction, that is, by the infection which in some cases followed the injury caused by the splinter. Unfortunately, we can not remove the infection from the eye with the splinter. Consequently, in my 165 cases I had to remove the eye 39 times ultimately because of purulent inflammation of the primary wound. In 9 cases lingering cyclitis set in, generally brought on by the injury and not by the operation. Nineteen eyes were preserved, that is, saved from inflammation, but they were sightless. In 71 cases the eye could be used or could be made of use by a cataract operation, and 51 of these 71 eyes healed with good sight.

USE OF IODOFORM TABLETS.

But how can we counteract the infection of the eye brought on by the foreign body? Here and there after a prompt removal of the splinter a hypopyon may disappear of itself, and so much is certain, that splinters should always be removed as promptly as possible.

Ten years ago I began first to introduce iodoform into the eye for tuberculous and similar kinds of inflammation, and now for some years I have used this intraocular mode of disinfection in a somewhat more convenient form. I made little rods and tablets of iodoform-gelatin, which I inserted in the eyeball. The eye bore the iodoform well in the anterior chamber, and I introduced it into the vitreous also several times with good success. It is true that the infection was often stronger than the disinfection, but in many cases I had reason to ascribe to the iodoform a favorable effect on the inflammatory process, resulting in a final cure.

This method must be further put to the proof. For the present I can only recommend it to you warmly, the more so because it can not do any harm and certainly very often does good. The little iodoform rods are either introduced through the wound caused by extraction into the anterior chamber, and from thence, if necessary, into the vitreous, or an incision is made to get them into the eyeball. By means of forceps these rods, which are cut obliquely, can be quite easily pushed through a small incision. One has only to be careful that they do really reach the anterior chamber or the vitreous, otherwise they might slip out again.

SUCCESS OF THE LARGE MAGNET.

All I have just told you is the result of ten years' observation on my part and many experiments on human and animal eyes. It was all the more incumbent on me to speak of the subject here, as I have not published anything for seven years concerning my instrument and my method, persuaded as I was that the large magnet would win its own way in spite of all opposition. I may say that it has won its way, and I rejoice to know that just in this very land where I have the honor of speaking it was used with success soon after its introduction and in many places.

FOREIGN BODIES IN THE EYE.*

WILLIAM M. SWEET, M.D.

PHILADELPHIA.

Injury of the eyeball from the penetration of foreign bodies has become more frequent during the past decade, as a result of the increased number of laborers engaged in the metal industries, and, to some extent, probably owing to the substitution of steel, with its hard, granular and easily fractured structure, for the tough and fibrous wrought iron previously used in manufactures. The majority of bodies entering the eye are of iron or steel, but occasionally small shot, copper, pieces of glass or coal strike the ball with sufficient force to penetrate into the interior.

When the eye is struck by a piece of metal, the size of the particle, its shape and the force with which it travels affect the character of the injury to the structures of the globe. A large piece of metal may cause serious injury from contusion, or may penetrate the cornea and lens, without being retained, but smaller particles usually penetrate into the interior of the eye, most frequently lodging in the vitreous.

AIDS TO DIAGNOSIS AND LOCALIZATION.

It is often difficult to determine in recent injuries whether the foreign substance has penetrated into the eyeball. A small wound of the cornea, with opacity of the lens, is almost positive indication that the foreign body has passed into the interior of the eyeball and been retained. Small entrance wounds through the sclera are sometimes difficult to find, owing to swelling and congestion of the conjunctiva or to extravasation of blood beneath its surface.

Where there is cloudiness of the media of the eye, it is conceded that the *x*-rays are the most certain and accurate means of diagnosing the presence and position of a foreign body in the eyeball. Unlike the magnet, which is only useful when the particle is of iron or steel, the rays will show all kinds of metal, shot, stone, glass and even coal, all of these substances being more or less resistant to the passage of the rays, depending upon the degree of exposure and the manipulation of the tube. Unfortunately the *x*-rays are not always available, nor is it possible to secure at all times the necessary experience to determine from the radiographs the position of the metal in the eyeball.

Apart from the power possessed by the larger magnets of extracting iron or steel from the eye, it is recognized that they have a certain value in detecting the presence of these metals in recent injuries. When an eye containing a particle of iron or steel is brought within the field of a powerful magnet, the attraction of the metal causes in many instances the sensation of pain in the eye; if the metal is in the lens or iris, a bulging of the iris or a movement of the lens indicates the presence of the foreign substance. It is impossible to accept, however, the negative findings of the magnet as conclusive evidence of the absence of steel in the eye, even the giant magnet having failed in a number of instances. In old injuries, when the body is surrounded by fibrocellular tissue, pain is not so likely to be elicited by the magnet as when the case is recent.

Excellent results have been secured by the siderоscope, but it is a delicate instrument, even in the improved form as devised by Hirschberg, and is so easily influenced by its surroundings in the large cities that it

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee: Drs. Frank Allport, H. V. Würdemann and J. A. Lippincott.

has a limited usefulness, particularly when more certain methods of diagnosis are available.

As I have shown in a previous communication* the direction of the wound of entrance studied in connection with the position of the patient at the time of injury, offers no positive data as to the situation of the body in the eyeball. As a matter of fact the majority of bodies entering through the cornea and lens are not imbedded in the posterior portion of the globe, but their force becomes spent after entering the vitreous, and they are found at the lower part of the chamber. Thus, in 81 cases in which the foreign body was located by the *x*-rays in the vitreous chamber, there were only 11 cases of the metal being situated above the horizontal plane of the ball. Of the total 81 cases, the metal was in the ciliary region in 26, near the equator in 38, and at the posterior part of the vitreous in 17.

It is now generally conceded that the less the traumatism to the internal structures of the eye in the extraction of the foreign body the more hope there is of preserving the eyeball and saving some sight. The entrance of any magnet point into the vitreous is harmful, and it is in recognition of this fact that larger magnets are now more generally used to draw the metal either into the anterior chamber or to an opening in the sclera close to the previously determined situation of the body.

MAGNETS AND THEIR EMPLOYMENT.

The Hirschberg magnet has long occupied an important position as an instrument of value in injuries from foreign bodies. Its comparatively low power compels the introduction of the magnet point into the vitreous and in contact with the metal to insure its removal. Even when the situation of the metal is known, several insertions of the magnet point are necessary to secure the metal in recent injuries, and where the body is covered by exudate the difficulties of its removal are further increased. The insertion of the magnet point into the vitreous is never justifiable unless the situation of the body has been previously determined with some degree of accuracy, and only when attempts at extraction with the magnet at an opening in the sclera close to the position of the body have failed.

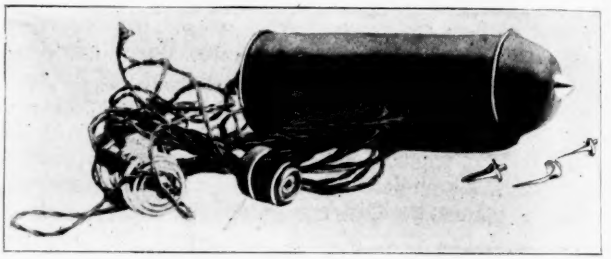
The recognized limitations of the small Hirschberg magnet has led to the recent construction of a number of larger hand magnets operated by the 110-volt lighting circuit, of which the Johnson and Lippincott are familiar examples in this country, the Hirschmann and a larger magnet designed by Hirschberg being used abroad. Recently Queen & Co. of Philadelphia have made for me a hand magnet for use on the direct incandescent lighting circuit, the form of construction differing from that usually pursued in the winding of magnets. The magnet is 10¾ inches long, 2½ inches in diameter, and weighs slightly over 10 pounds. The core is 1½ inches in diameter, one end being rounded, and the other tapped to accomodate points similar to the Hirschberg small magnet. The core instead of being uniform in diameter, gradually tapers towards the end to which the tips are attached, being elliptical in longitudinal section, the windings of the wire at the tapered end being more numerous than at the rear portion. This method of construction was followed in the belief that there would be secured a more perfect saturation of the pole of the magnet.

A number of various sized tips are supplied, the one having the greatest power being ovoid in shape, ⅝-inch in diameter at the base, and ⅝-inch long.

*Transactions American Ophthalmological Society, July, 1901.

An opportunity of testing the power of the magnet clinically has been afforded in 10 cases, 3 with steel in the posterior chamber, and 7 in the vitreous. Of the 7 cases the body was in the ciliary region in 2, at the equator in 3, and at the posterior portion of the eye in 2. In 4 of the cases the steel was removed by placing the magnet point at an opening in the sclera, while in 2 instances the magnet point had to be inserted into the vitreous. In one of these cases the extraction was 20 days and in the other 17 days after injury, the metal in this time probably being held by a firm exudate. In one case the steel, situated at the posterior part of the vitreous, was removed through the reopened initial wound, in front of the attachment of the external rectus, the magnet drawing the metal through the length of the vitreous.

Following the line of investigation made by Türk, of the comparative drawing power of the Haab and the small Hirschberg magnets, similar tests were made of the magnet here shown, using various-sized splinters of iron at different distances. The magnet was placed with its long axis vertical, and the splinter was held in recesses in a soft piece of wood, each recess being at a measured distance from the magnet tip. The holder containing the splinter was suspended from one arm of a delicate balance of non-magnetic metal, the other arm of the scales carrying the weights. After the current was turned into the magnet, weights were placed in the balance until sufficient was added to overcome the attraction of the magnet for the splinter at



each given distance. The results of these tests are shown in the accompanying statement, the data for the Haab and Hirschberg magnets being taken from the figures determined by Türk.

TABLE OF THE POWER OF ATTRACTION OF MAGNETS.

Distance of splinter from magnet. Mm.	Magnet.	Weight of splinter. Grams. .001	.005	.010	.020	.050
		Power of attraction. Grams.				
25	Hirschberg					
	Haab	0.013	0 097	0.28	0 57	1.5
	Sweet	0.007	0 045	0 06	0.15	0.298
10	Hirschberg	0 0005	0.001	0.012	0 008	0 054
	Haab	0 128	1.070	2	3 3	9
	Sweet	0.100	0.445	0.750	1 8	2 1
5	Hirschberg	0 007	0 03	0 013	0 134	0 43
	Haab	0 266	2 3	3.8	7 5	16.
	Sweet	0.450	1.9	2.65	5.49	11.51
2	Hirschberg	0 076	0.275	0.773	1.08	2 45
	Haab	0 064	3.8	5 7	11.	25.
	Sweet	1.400	4.7	7.75	16.07	41.
0	Hirschberg	13 7	29.	32.	69.	119.
	Haab	16.7	47.	42	92.	142.
	Sweet	14 4	63.	83.	119.	132.

The figures in the table show the superiority of the Haab magnet in its attractive power over all sizes of splinters situated 10 mm. or farther from the magnet. When the splinter is 5 mm. distant, the drawing power of the Haab magnet is still greater than the medium-

sized magnet, but the difference in power is not marked. At 2 mm. distance between the magnet-tip and the splinter, the advantage appears to be in favor of the medium-sized magnet. The result of this test was somewhat surprising, but a repetition of the experiment gave the same figures. Türk has previously shown that the strength of different magnets varied but little when the splinters were in contact with the magnet tip, the small Hirschberg being almost equal in power to the Haab. The same results are seen in the tests with the medium-sized magnet. Of course, the results achieved in the laboratory are not what would be secured in the actual conditions as found in the eye, but the figures are interesting as showing the relative power of the magnets with different-sized particles.

PRECAUTIONS IN THE USE OF MAGNETS.

There is still a difference of opinion, in injuries seen after the wound of entrance has closed, whether the removal of the metal from the vitreous should be attempted through the re-opened initial wound, or whether it is better to extract the body through an opening in the sclera near to the previously determined situation of the steel. From my experience I believe that the risk of injury to the eye will be less if the latter course is followed. The extraction of bodies through the region of the iris and ciliary body is by no means free from the danger of having the body entangled in these structures, particularly if the size of the body and its situation in the eye is not known. The Haab magnet is a valuable instrument, but it must be used with caution. Those who have had the most experience call attention to the danger of imbedding the splinter of metal in the structures of the eye by using too strong a current or having the magnet too close to the eye.

I believe that even when the large magnet is used, the operator should have some knowledge in the individual case of the size of the metal in the eye, and its approximate position, so as to avoid using more power than is sufficient to extract the metal. It has been conclusively shown by the experiments of Türk that the power of the large magnet increases greatly as the metal is drawn towards the tip of the instrument, being 22 times greater when the metal is within 2 mm. of the magnet point than it was when the body was a distance of 25 mm. It is the great speed at which the splinter travels as it approaches the magnet that increases the danger of the body becoming imbedded. The larger the particle of metal the greater the distance the magnet should be from the eyeball, whereas, with small bodies the magnet-tip must be brought close to the cornea.

If it is considered that the best means of extracting iron or steel from the vitreous chamber is by way of the anterior chamber, then the Haab magnet is without equal, since its superiority over any smaller magnet when the metal is distant 10 to 25 mm. from the magnet has been proven experimentally and in practice. If the plan is followed of opening the sclera at a point close to the previously determined position of the metal, so that the tip of the magnet is distant but a few millimeters from the splinter, experiments show that the efficiency of the medium-sized magnet compares favorably with the large magnet, besides having the advantage of easier manipulation.

Non-magnetic bodies entering the eyeball are grave forms of injury, owing to the difficulty of affecting their removal. The *x*-rays offer the only certain means of indicating their situation in the eye, from which extraction may be attempted by forceps, any loss of vitreous being replaced by normal salt solution.

In the after-treatment in cases of magnet extraction, the employment of continuous cold to the eyeball is of the greatest benefit in allaying the inflammation, supplemented by atropia and complete rest in bed for several days.

CONCLUSIONS.

1. The size of the splinter of iron or steel, and its approximate position in the eyeball, should be known before an attempt is made to extract it by either the medium-sized or the giant magnet.
2. The *x*-rays are the most certain method of diagnosis in injuries from all kinds of foreign bodies.
3. The large and medium-sized magnets are of value in determining the presence of iron or steel, but negative findings can not be accepted as conclusive evidence of the absence of the metal in the eyeball.
4. The Haab magnet is superior to all forms of smaller magnets in extracting iron or steel from the vitreous chamber by way of the anterior chamber, but the great power of the instrument requires that it shall be used with caution.
5. When the body is to be extracted through an opening in the sclera close to the previously determined position of the metal the medium-sized magnets are shown by experiments to be as effective as the giant magnet.
6. The entrance of the magnet point into the vitreous is harmful, and should never be attempted except when other means of extraction have failed.

THE REMOVAL OF BITS OF STEEL FROM THE INTERIOR OF THE EYE,

BY THE HAAB MAGNET, WITHOUT INCISION IN THE SCLERA.*

MYLES STANDISH, M.D.

Ophthalmic Surgeon, Massachusetts Charitable Eye and Ear Infirmary; Instructor in Ophthalmology, Harvard University.

BOSTON, MASS.

The object of this paper is to report a series of eight cases, occurring in my service at the Massachusetts Charitable Eye and Ear Infirmary, in which a long, slender-pointed bit of steel was driven through the cornea and lens and was removed without making an incision in the sclera. The undesirability of such an incision is manifest to everyone, as injury to the choroid and retina is unavoidable.

In all these cases, by the use of the Haab magnet, the foreign body was compelled approximately to retrace the track by which it entered the eye. It is true that if the bit of steel does not become impacted in the fundus of the eye, it will fall to the bottom of the vitreous chamber, so that in retracing its course to the pupil it may encounter the lens at a different point from that through which it entered. In the cases here reported, it will be observed that it took one of two courses; it either followed the posterior surface of the lens until it came to the suspensory ligament through which it passed, and rose from there through the pupil to the point of the magnet, or, as was more frequently the case, it repenetrated the lens at another spot, passing to the point of the magnet by a direct line. This second wound of the lens does no special harm, as the lens is sure to become cataractous from the initial wound. Such foreign bodies always approach the magnet longitudinally if there is sufficient space for them

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee: Drs. Frank Allport, H. V. Würdemann and J. A. Lippincott.

to assume that position before they come in contact with the lens. It will be seen that in the following cases the foreign body assumed that position in every instance. The method of procedure in each case was to bring the point of the Haab magnet almost in contact with the cornea with its axis in a projection of the line of entrance of the steel as shown by the wounds in the cornea and lens. The electric current was then slowly turned on and increased or reduced in accordance with the resistance which the steel met in the lens, care being taken that the steel did not come into the anterior chamber with any great violence.

By this method of procedure not only are the retina and choroid uninjured, but the ciliary body and iris are seldom wounded, which is, of course, a highly desirable result. If the patient is under 35 years of age, the lens can subsequently be removed by suction, either with or without a previous decision. If he is above that age, the lens can generally be removed by means of an ordinary extraction, although with some difficulty.

CASE 1.—A man 23 years of age, a stone cutter, was struck on the day of entrance by a bit of steel. The cut of the cornea in the upper and inner quadrant penetrated at central end. There was a nick in the margin of the iris at the inner side. The lens was already opaque along the track of the penetrating foreign body. The patient was placed before the Haab magnet and the foreign body was seen to come forward through the vitreous and enter the lens where it lodged, subsequently penetrating the lens substance. It was finally withdrawn from the anterior chamber with forceps which were in contact with the magnet. The foreign body proved to be a bit of steel 3 mm. by 1 mm. Twelve days later the lens was removed by suction. Patient was discharged 10 days subsequently with a V. of 1/40.

CASE 2.—A man 18 years of age, while using a cold chisel, was struck in the left eye on the day of entrance by a bit of steel. There was a penetrating, irregular wound of the upper and outer quadrant of the cornea. The iris was caught in the wound. The pupil much dilated. The lens showed beginning opacity most marked in upper part. No foreign body was detected with the ophthalmoscope. Patient was placed before the Haab magnet. The foreign body came forward from behind the lens, following its surface through the suspensory ligament into the anterior chamber where it settled to the lower angle, whence it was removed with a small magnet. Patient discharged 22 days later with the eye quiet.

CASE 3.—A man 38 years of age was struck one week before in the left eye by a bit of steel while striking a cold chisel with a hammer. The cornea was clear except for a linear scar 2 mm. in length just above the center. There was a wound in the anterior capsule of the lens which was opaque. There were posterior synechiæ which were broken away by atropin and three days later the patient was placed before the Haab magnet, an incision having been made through the cornea at the point of the injury. The metal was seen to come up from below and finally came forward through the center of the lens. It was removed from the anterior chamber with a small magnet. Patient was discharged 21 days later with eye white and quiet.

CASE 4.—A man 42 years of age was struck four days before entrance by a flying fragment while cutting an iron hoop with a cold chisel. The cornea showed on upper and outer side a yellowish-gray infiltration about 2 mm. by 1 mm. in the horizontal axis. The pupil was fairly well dilated. Lens was somewhat opaque, but with the ophthalmoscope there could be dimly made out in the vitreous downward and outward, a shining grayish body with metallic luster. There was considerable hypopyon. Next day patient was placed before the Haab magnet and the piece of steel was drawn through the lens and against the posterior surface of the cornea. It was extracted through an incision, made with a Graefe knife, by a pair of forceps which were in contact with the magnet. It was easily withdrawn. Steel was 2 mm. by 1 mm. Patient was discharged two days later against advice.

CASE 5.—A man 30 years of age was struck in the right eye on the day of admission by a fragment from a cold chisel. There was a penetrating wound of the cornea. The piece of steel was seen lying in the anterior chamber, one end embedded in the anterior surface of the lens, and the other in the posterior surface of the cornea. The wound was 1 mm. in diameter and central. The anterior chamber was not evacuated. Patient was placed before the Haab magnet and the fragment was easily extracted. Fragment was 4 mm. long and 0.5 mm. wide. There was infection of the wound and considerable hypopyon followed. Nine days later a small black object was discovered projecting slightly above the surface of the cornea in the center of the infected area. The patient was again placed before the Haab magnet and a magnetic body 0.5 mm. in length was removed. The corneal infection ran a very tedious course, and when the patient was discharged, 10 weeks afterward, the eye was still somewhat red and there was an opaque lens.

CASE 6.—A man 45 years of age was struck in the right eye on the day of entrance by a flying chip of iron. There was a wound of the cornea near the lower margin running obliquely upward and outward about 3 mm. The anterior chamber was filled with blood. Patient was placed before the Haab magnet and the current was turned on gradually. A bit of metal was drawn through the original wound. The metal was 6 mm. by 0.5 mm. Some iris prolapsed, but was abscised. Patient discharged three weeks later with eye white.

CASE 7.—A man 35 years of age was struck in the left eye by a flying splinter of steel. Was seen two days before entrance. The examination then showed a lineal cut of the cornea near the center about 2 mm. in length. A cut in the anterior capsule at inner side of the center through which swollen lens substance protruded. Pupil was dilated with atropin. The periphery of the lens was found clear. With an ophthalmoscope a metallic mass could be made out apparently lying in the vitreous not far behind the lens on the nasal side. Patient refused operation. He returned two days later and entered the hospital. The entire lens was opaque and swollen. Pupil fairly well dilated. Tension normal. The eye was brought to the point of the Haab magnet when a piece of metal 8.5 mm. long was drawn point foremost through the lens and wound. A portion of the iris was caught and dragged forward at the same time; this was abscissed. Patient was discharged 21 days later. The lens was subsequently operated on by discission.

CASE 8.—A man 25 years of age was struck with a fragment from a hammer on the day of entrance. There was a horizontal cut of the cornea near the inner limbus. The iris prolapsed through a ragged wound about 3.5 mm. long. There was a shallow anterior chamber. The lens was clear except immediately behind the corneal wound. On the following morning the cornea was clouded and lens opaque. There was a sloughing mass protruding through the wound. The patient was placed before the Haab magnet, but no foreign body was obtained, nor any indication of its presence manifested. Two days later, there being a slough of the entire cornea, evisceration was proposed and accepted. A piece of steel 3 mm. by 2 mm. was found in the eviscerated mass.

Thus, in eight cases by the proper use of the Haab magnet, the foreign body was recovered seven times without injury to any tissue which was not seriously damaged during the entrance of the piece of steel. The one case in which the foreign body was not recovered was probably due to the infection which caused such a large amount of lymph to be poured out into the vitreous chamber that it was impossible to withdraw the bit of steel from the center of this mass of material.

DISCUSSION

ON PAPERS OF DRS. HAAB, SWEET AND STANDISH.

DR. CHAS. J. KIPP, Newark, N. J.—I think you will all agree with me that it was a happy thought to use the large

magnet for the purpose of extracting fragments of iron from the eye. We all recognize that by this means we can now extract foreign bodies that we could not before, and in many cases save the form of the eye at least if we can not save the sight, and I think the man who conceived this idea should be regarded as one of the great benefactors of mankind. I want to touch on some points not mentioned.

Prof. Haab has shown us how to extract foreign bodies so as not to have them become entangled in the iris or the sclera; but sometimes foreign bodies will become so entangled notwithstanding all care, and can not be got out of the eye by the ordinary procedure without mutilating the iris.

There are cases also where in spite of all precautions they become entangled in the sclerotic and an incision has to be made in this membrane to extract from the eye. I had recently a case, which I will relate, in which I succeeded in removing a large piece of iron after it had become entangled and could not be budged through the wound of entrance, by the successful application of the familiar law of magnetic polarity, which, so far as I know, has never before been made use of in such cases.

The patient was a young man, who, while engaged in hammering, felt something strike his left eye, and this was followed by the escape of much watery fluid from the eye. His sight became greatly impaired immediately. He was seen by a physician, who noticed a wound at the outer sclero-corneal junction and who thought he saw a foreign body deep in the wound. He sent him to me at once and I saw him a few hours after the accident. There was no irritation about the eye. The conjunctiva was not injected, the cornea was clear, the anterior chamber somewhat shallow and containing a little blood, the iris was torn near the wound, and in the sclera, close to the outer margin of the cornea, in the horizontal meridian, was a linear wound, about 2 mm. in length, parallel to the margin of the cornea, from which vitreous was escaping. The pupil was somewhat dilated, the lens clear so far as I could see, and the vitreous full of dark, floating opacities. With the ophthalmoscope I could see a dark mass at the bottom of the vitreous chamber, but could not make out what it was. I placed the eye close to the Hirschberg simplified siderocope and the needle indicated the presence of iron at once. After cocainization and cleansing of the conjunctival sac, the eye was brought up to the giant magnet, and while still more than two inches from it, as soon as the current was turned on, I saw a large, glistening piece of metal back of the lens rise up and rush to the outer part of the eye and cause bulging of the sclera at a point about 6 mm. posterior to the wound. There one end of the piece of iron, which seemed to be too long and broad (while in the eye) to make its removal practicable without total destruction of the eye, became fastened, and no matter in which position the eye was put or how the magnet moved, it would not budge. To get it out of the eye nothing short of a large incision in the sclera seemed practicable and that would probably have caused the loss of much more vitreous.

It now occurred to me that as a piece of iron or steel on being near a magnet becomes magnetized and has two poles and that like poles of magnet repel, while unlike poles attract each other, that I might probably be able to dislodge the entangled end by using the other pole of the magnet, and therefore turned the magnet around on its pivot and as soon as the other pole (not previously used) came near the eye I saw this large mass of iron swing around in the vitreous chamber, the bulge in the sclera disappear, and the other end come towards the wound of entrance and in less time than it takes to tell, the foreign body came out of the wound of entrance onto the magnet. The eye was cleansed, atropin was instilled, a bandage applied and the patient put to bed. There was no reaction whatever. The wound soon closed. At first it seemed as though the lens had escaped injury, but a week after the operation it became cloudy and in the following week became opaque throughout. The eye has good light perception and the visual field is intact. The iron removed measured 18 mm. in length and was about 2 mm. in width at one end and 1 mm. at the other, where it was sharp-pointed and very thin. It weighed 10 mg. It was the longest piece of iron that I have removed from the vitreous chamber.

I have since then, in several cases in which the piece of iron became entangled in the posterior layer of the iris on its way from the vitreous, succeeded by the same procedure, in swinging the iron through the pupil into the anterior chamber, and in fresh cases out of the wound of entrance, while in others where the wound of entrance was closed, I have brought it out through an incision in the cornea, without injuring the iris.

In order to get the iron into the pupil when one end has become fastened to the posterior layer of the iris, it must be remembered that the free end of it is of like polarity as the point of the magnet which has attracted it to its present position and that the like pole of this iron if free will move in a direction opposite to that in which this pole of the magnet is moved. The point of the magnet (originally used) should therefore be moved gradually towards the outer periphery of the iris, if the iron is entangled in the outer half, and to the inner if the iron is in the inner half, and this movement must be continued in the same direction until the other (like) pole is in front of the eye. When retained in the upper or lower half, the point of the magnet must be moved up when situated in the upper half, and down, when in the lower half of the iris.

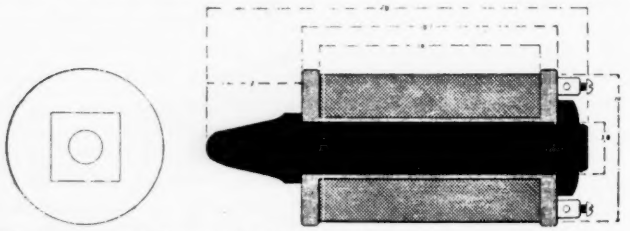
DR. HERMAN KNAPP, New York—In polite society it is customary to begin discussion by complimentary remarks, but the usefulness of Prof. Haab's magnet is self-evident, and as some one has already said, it has done so much good for many people that Prof. Haab should be considered one of the great benefactors of mankind.

Before the Haab magnet was introduced we used to get foreign bodies out with the small magnet, sometimes we succeeded and sometimes we met with obstacles. Sometimes the foreign body was extracted through the scleral wound, the eye closed and everything seemed to be all right, but in three or four months or later detachment of the retina was the result, even after the easiest operation and the smoothest recovery. For this reason I have endeavored to avoid the original opening when it is in the sclerotic. I always try and mostly succeed in drawing the foreign body to the posterior pole, thence around the equator of the lens into the anterior chamber and through a corneal incision out of the eye, as Prof. Haab has described. Prof. Haab and others have spoken of the dangers of extracting foreign bodies through the sclerotic and I just want to emphasize it.

DR. H. W. WOODRUFF, Joliet, Ill.—I wish to report twenty-five cases of steel in the vitreous treated at the Chicago Eye, Ear, Nose and Throat College; in twenty-two of which the foreign body was located and removed by the giant magnet. The operation was followed by enucleation in two of these cases. In one case the steel was not located by the magnet, but was found in the eyeball after enucleation. The steel was not found by the magnet in one other case, but was located by the *x*-ray. These figures were furnished me at my request by Dr. Hoffman, the secretary of the college.

DR. H. G. SHERMAN, Cleveland, Ohio—No persons who present themselves to the oculist cause greater anxiety than those giving a history of an impaction of a foreign body in the tissues, or a penetration and a lodgment of the same within the chambers of the eye. It nearly always happens that the point of entrance and lodgment of a foreign body is difficult to make out, owing to hemorrhage or swelling. Should a foreign body be lodged in the tissues of the eye or chambers, it is of the gravest concern, for we know with almost absolute certainty that sooner or later an irido-cyclitis or irido-choroiditis may supervene, with probable loss of the eye in case the foreign body can not be safely extracted. We know also of the almost certain involvement of the integrity of vision of the other eye sympathetically in case of violent inflammatory reactions occurring in the injured eye, therefore any means which will aid in the certain diagnosis of the presence of a foreign body within the eye and assist in its removal necessarily affords great satisfaction. It is, therefore, with great pleasure that I accord to Prof. Haab all honor for having given us the large magnet bearing his name, the use of which

has done so much for humanity, but the cost of his magnet precludes its use in many instances; I beg, therefore, to call your attention to a form of magnet which was made for me, of soft Norway iron of the single-bar type, the size and shape of which I will endeavor to illustrate by means of the blackboard drawing (See figure). It may be energized by a current from electric (incandescent light) wires, about twelve amperes and an electro-motive force of one hundred and twelve volts developing a resistance force of about one hundred and twenty-



Section through center of magnet. All sizes given in centimeter.

five pounds to the square inch will be found to be sufficiently powerful to draw small particles of iron and steel from the eye tissues. There is, however, no limitation to the power which may be developed in this form of magnet, and inasmuch as its cost should not exceed twenty-five dollars, it will commend itself to many of the profession who are not able to purchase the splendid magnet devised by Prof. Haab.

DR. M. WIENER, St. Louis—I would like to report a case I saw a week ago last Monday, of a foreign body in the lens which could be seen very plainly and which had been in the eye for two months. I tried the Haab magnet, but it would not remove it. It may be that it was not used to the best advantage, but I had removed foreign bodies before with the magnet. I could see the body move forward, but it could not be withdrawn, and I had to make an incision and extract with the small magnet. With regard to the price, I had a magnet made after the pattern of the Haab magnet with two large motor coils, and the price, already set up and connected with a five-hundred-volt current, was a little less than sixty dollars.

DR. E. E. HOLT, Portland, Maine—I was pleased to hear Dr. Sweet say that he preferred to open the sclerotic rather than risk too much injury to the anterior part of the eye. In my first series of cases, reported to the American Ophthalmological Society some years ago, I invariably opened the eye through the sclerotic, with the Graefe knife and used the Bradford magnet. I have had occasion to watch these cases and none of them have, so far as I have learned, lost an eye through the wound made in the sclerotic. My impression is that the wound heals kindly and in almost all cases afterwards you could see a fine linear scar with the ophthalmoscope. I have operated on cases where the eye was in a state of suppuration and seen the suppurative process cease and the eye so far as the case could be traced was a useful organ afterward. In a large experience with these cases now ranging over a period of fifteen years, I am highly pleased with the results and do not remember a single instance of sympathetic inflammation of the fellow eye where metal had been extracted by a magnet from the interior of an eye.

DR. S. B. MUNCASTER, Washington, D. C.—I operated with a dry cell battery last December for foreign body in the eye; a piece of steel embedded in the iris. After cocainizing the eye I made an incision in the cornea and placed the end of the magnet to the iris near the foreign body and it came away without any difficulty and after using atropin the man returned to my office in a week and had good sight, vision =6/5.

DR. J. A. LIPPINCOTT, Pittsburg, Pa.—There can be but little doubt but that the Roentgen ray machine affords the most accurate means of diagnosing the presence and position of foreign bodies in the eye. But its use demands expert knowledge and skill such as are possessed by very few. On the other hand, no special skill is required to discover the presence and quite frequently the exact location of particles of iron or steel by means of a fairly strong magnet. To illustrate the usefulness of the latter from this point of view, I beg to show you a small particle of steel about 1/100 of an inch in length whose position in the opaque lens was determined positively through the minute to-and-fro movements of the lens tissue caused by turning the magnet off and on. Let me also exhibit another particle a little larger than the last mentioned, whose position was found through the pain elicited when the magnet tip approached the place where it lay, which was just behind the ciliary body.

The practical value of large magnets in ocular surgery can scarcely be exaggerated and I heartily endorse what has been said as to the importance of Prof. Haab's contribution to the welfare of mankind. The small magnets in use before Prof. Haab invented his strong one were of great service, but they would have been ineffectual in such a case as the one which furnished this third specimen. It is about 9 mm. long by 1 mm. thick. Most of it lay in the vitreous chamber, its anterior point being just visible behind the edge of the pupil. It had penetrated the zonule without injuring either the lens or the ciliary body. The steel leaped through the wound of entrance when the magnet touched the cornea and the vision was perfectly normal in a few days.

Nothing but a strong magnet could have saved the man from whom this fourth specimen was taken from total blindness. The particle is irregular in shape, about 10 mm. square and 5 mm. thick with jagged edges. It went through the center of the cornea and lens and lodged in the vitreous. The accident had happened 48 hours before I saw him and the globe was very edematous. The other eye had been blind for years so that the case looked desperate. As a matter of fact, months passed after the removal of the steel before any improvement in vision was apparent and two operations were required, viz., an iridectomy and a discission. The patient about two years after the accident had corrected vision of 20/40 and was able to go back to work. Undoubtedly he in a great measure owed his recovery to Prof. Haab because my magnet like those of Johnson and others are really children of the Haab magnet.

DR. E. C. ELLETT, Memphis, Tenn.—I would like to mention two cases in this connection. The first, that of a young woman, twenty-five years old, struck in the eye by a small particle from the head of a tack, which created so little disturbance that she did not seek advice until the following day. There was a small wound in the cornea, just over the pupillary edge of the iris, which had completely closed and the anterior chamber was reëstablished. The foreign body had nicked the pupillary margin of the iris, gone directly through the lens, and could be seen in the retina, just below the optic nerve. It was removed through a scleral incision with the small magnet. The case ran the usual course, with one exception, that the opacity in the lens has not yet increased one bit. That was over a year ago. Her vision immediately after the accident and recovery was 20/30 and with a correction of 1 diopter of astigmatism, 20/15. About a week ago I tested her for the purpose of making a report to this section and her vision was still 20/30 without making the astigmatic correction. The fact that no cataract formed may be due to the very small size of the particle, not more than 1.5 mm. in diameter, and that it went through so quickly and made such a small wound that the capsule closed immediately and did not admit any aqueous.

The second case did not give such a brilliant result. The case was that of an adult negro, hit in the eye by a sling-shot. On admission to the hospital there was a large wound of the cornea, iris and lens. He was positive that the particle had dropped from the eye after it had hit him. The wound closed and the next day in the evening panophthalmitis developed and I did an evisceration, finding a piece of iron, 8x4x2 mm. The inflammatory process was not influenced by the evisceration, orbital inflammation was set up and the swelling extended over to the other side of the face and down to the neck and chest. His temperature rose, he became septic, comatose and died. There was no wound of the sclerotic, the foreign body had not gone beyond the eyeball. The infection was by the *Bacillus coli communis.*

DR. S. D. RISLEY, Philadelphia—I would like to ask a question of Prof. Haab regarding the best procedure in certain cases where the exact locality of the foreign body is known. Last year I unfortunately had to determine what to do in four cases where foreign bodies had penetrated the eyeball. One of these cases I saw an hour after the accident and with the ophthalmoscope could see the foreign body glistening in the lower, anterior portion of the eye, just to the nasal side of the verticle meridian. The question is, what should be done in such a case? The media transparent, the injury new and the foreign body almost below the lens, lying on or near the ciliary processes. In Philadelphia it has been the habit of myself and colleagues to do very much what I did in this case, since we have not until recently had a Haab magnet at our disposal. I made a meridional incision just to the nasal side of the inferior rectus muscle and placed the tip of a Hirschberg magnet just within the lips of the small wound and had the satisfaction of withdrawing the foreign body at the first trial. Now, did I do more injury to the eye than I might have done with this large and powerful magnet in endeavoring to draw the steel particle across the ciliary processes, through the zone of Zinn or the suspensory ligament and so into the anterior chamber and thence out of the ball through a section made in the corneal; thus risking its entanglement in the ciliary body or iris, or the wounding of the lens capsule? Did I run more risk of permanent injury to the eye by detachment of the retina or cyclitis than would have been the risk of having it entangled in the ciliary body and iris?

DR. W. B. MARPLE, New York—This question, as to how we shall remove these foreign bodies of iron or steel lodged far back in the vitreous, seems to me a very important one. Shall we draw them forward around the lens and through the pupil into the anterior chamber and thence remove them, as Prof. Haab advises? Or shall we, especially when we can locate them with the ophthalmoscope, make an incision through the sclerotic in the immediate vicinity of the foreign body and thence remove them? I must confess that I am not quite convinced that the former method is preferable. It seems to me that the question is not to be decided by theoretical considerations, but rather by the results in a number of cases. Dr. Knapp has just told us of one of his cases in which the foreign body was removed through an opening in the sclera and a retinal detachment followed in three months and has stated his opinion based on this experience that the foreign body should be removed by way of the anterior chamber. Dr. Risley's case is an exactly similar one and I should like to ask what was the ultimate result in his case; whether any detachment of the retina followed?

DR. RISLEY—No detachment followed. There was no reaction and the ultimate visual result was excellent.

DR. HIRAM WOODS, Baltimore—The remarks of Dr. Knapp, Dr. Risley and Dr. Marple lead me to mention a case. A young man was brought to the Presbyterian Hospital with a small wound in the lower portion of the sclera about 10 mm. behind the sclero-corneal junction. He had at the time 20/40 vision, and a history of having been injured the previous morning. The eye was free from irritation. I saw him for the first time after four days. There was then considerable irritation and the ophthalmoscope showed a little, glistening body in just about the position Dr. Risley has described—about as far forward as could be seen through the dilated pupil. A similar procedure was undertaken to that Dr. Risley has just described—the tip of a Hecker magnet being put into the wound—and the foreign body easily extracted. There was practically no reaction and a week after the operation he had the same vision as before. He was discharged, but came back six weeks later with detachment of the retina. The explanation of retinal detachment is doubtless the same as that given by Dr. Knapp in his case.

DR. E. V. APPLEBY, St. Paul—Before attempting the extraction of foreign bodies which have penetrated the globe, I believe that too often we do not sufficiently endeavor to determine accurately enough their position and their size. Given an eye in which we have reason to suppose a foreign body is imbedded, let us first make a careful ophthalmoscopic examination. If, after so doing, we are unsuccessful, let us apply the sideroscope. One can, after having had experience in the manipulation of the simplified form of this instrument, viz., Hirschberg's sideroscope, use it with comparative facility. The results obtained with the sideroscope in many instances are not only time saving but they enable us to tell the approximate position and size of the foreign body accurately enough to warrant the immediate application of the magnet. If considered necessary we may use *x*-rays. We should try to get a bitemporal and also as nearly as possible an antero-posterior picture. As guides, pieces of fuse wire may be placed about the eye so that they form tangents from which we can make measurements after the picture is taken. The results of the device which Dr. Sweet has given us to determine the location of the foreign bodies within the eye and orbit are undoubtedly the most accurate of all methods. After such a study of the position and size of magnetic foreign bodies, we are ready to apply the magnet—which should be supplied with an ample rheostat—with its tip at the "point of election" as Dr. Sweet has so aptly called it—this point being in a position so that the power lines of the magnet would attract the foreign body in the direction which would be least damaging to the eye during extraction.

DR. HENRY B. YOUNG, Burlington, Iowa—Dr. Lippincott's remarks have encouraged me to ask a question which may not be exactly germane to this discussion, but of this you can judge for yourselves. I have recently had a case in which if I had had the Haab magnet I should have used it and was afterwards glad that I did not have it. The condition was a small wound, ⅛ inch in length, at the lower outer sclero-corneal margin. Anterior chamber full of blood. Patient was kept in bed for a week. After four or five weeks eye had become quiet. There were large opacities in the vitreous, but the foreign body was only seen after an *x*-ray picture. The difficulty of getting information by the *x*-ray method is one of the subjects that has been discussed to-day, and I want to show this picture, from which the photographer maintains that the foreign body passed through the globe, is lying entirely outside of it and moves when the eye moves. The man has no pain on moving the eye in any direction and the eye-movements are not restricted. Now, what should be done with that piece of steel? Can the picture and photographer's statements be trusted?

DR. ALLEN GREENWOOD, Boston—I had a case of a small particle of steel situated in about the same position as that of Dr. Risley's case and which was removed by incision in the sclera and a small magnet-tip introduced. Two years since the operation the patient has 20/15 vision and the lens is clear except where the bit of steel passed through. The clearness of the lens, I think, may be accounted for in the same way as Dr. Ellett has spoken of in his case. The retina is intact.

DR. SWEET—In regard to the size of bodies that can be shown by the *x*-rays, I believe there is no limit. A small piece of metal which has sufficient weight to overcome the resistance of the ocular structures and penetrate the globe can be located from the radiographs. The method of localization employed is extremely simple, and is based on the crossing of the planes of shadow of the foreign body in two exposures studied from two known and fixed points. Whether the Haab or the small magnet is used, I think it important that we should know the situation of the body in the eye. Since the media are clouded in many instances, a tremendous pulling force is exerted by the giant magnet upon a body of unknown size and position, which increases the danger of imbedding it in the ciliary body or iris. At the last meeting of the American Ophthalmological Society, I reported 57 cases of extraction, a large number of which were watched for a considerable time after the body was removed. Of this number only 3 had retinal detachment, although in nearly every instance the small Hirschberg magnet was employed, and the point was entered into the vitreous, as a larger magnet was not available.

DR. STANDISH—I have nothing further to say, except that we are all very grateful to Prof. Haab for his kindness in coming to us at this time.

PROF. HAAB—There is not time to go into any details now,

but I would say a word or two about the complications that have been mentioned. I want to thank the Society very much for the interesting cases which have been related and for the remarks, and for your kindness in estimating my method. I would like to say a word about the two positions for performing the operation. You can take the position opposite to the eye, or the position behind the patient. Many patients are nervous and anxious when they see the big machine and in these cases it may be better to be behind the patient. Generally, I prefer the position opposite the patient so that I can see clearly the field of operation. As to the cases of foreign body in the lens, it is very easy to take a cataract knife and make an incision in the anterior capsule, if perhaps the splinter does not perforate it. As to the case of Dr. Risley, it is too bad that he did not have the large magnet. They are just the cases for it. It takes the piece of iron slowly into the anterior chamber and I can assure you that it is not so dangerous to the eye as going in with the small magnet. I prefer to let alone the vitreous. That is my first rule in all operations, not to touch the vitreous, and so it is my opinion that the large magnet is not so dangerous as the small Hirschberg magnet. Any instrument is dangerous in unskilled hands, but even then the large magnet is not so dangerous as the small one.

THE OMENTUM AS A SURGICAL FACTOR IN LAPAROTOMY.*

HENRY O. MARCY, A.M., M.D., LL.D.

BOSTON.

Modern surgery has done much to demonstrate the physiologic importance of the omentum. It is my present purpose to consider the omentum especially as a surgical factor in laparotomy, since I am very sure that its importance has been greatly underestimated and that the danger arising from its pathologic changes and injuries is a very considerable factor in the life problem. Even when recovery ensues, such changes are often the cause of local suffering and invalidism. Did time permit I would gladly consider the anatomic development and physiologic function of this important structure, upon which less is written and probably less really known than any other so considerable part of the body.

For our present purpose it is important, in its normal development, to emphasize the extraordinary vascularity of this really enormous fatty apron and to remember that its lymph channels are coextensive with its vascular supply. Every surgeon has remarked the differences which pertain to the disposition of fat in this organ, usually bearing a relation corresponding to that of a general fatty development. To this rule, however, there are many exceptions, and no matter how obese the individual the fatty deposit in man never approaches to that so commonly observed in some of the domestic animals.

The normal mechanical uses of the omentum are obvious, the retention and equalization of heat, the protection of the intestines from injury, the diminution of friction and the support of the intestines in their peristaltic functions. It is noteworthy to remark that there is normally a considerable variation in the relative size and length of the omentum as well as in the great variation in fatty deposit.

For obvious reasons, postmortem measurements furnish a less accurate standard than from observations made during life. It is rarely found that the greater omentum does not completely cover the small intestine extending quite to or below the pelvic basin. From one standpoint the omentum may be considered as a great lymph gland with the possible function of the equalization of the lymph circulation of the entire digestive system; from another standpoint, from its enormous reticulation of blood vessels, as a regulator for the equilization of the abdominal blood currents. It would be well, also, to inquire if the peri-glandular, fatty deposit of the omentum may not possess a far more important rôle than that of a heat equalizer, or even than that of the diminution of friction in the mobility of the abdominal organs, in that this peri-glandular fatty tissue, under favorable circumstances, by an increased activity of its cells, becomes converted into lymphoid tissue, and from this standpoint may itself be indirectly considered as an adjunct to the lymphatic system?

If this be true, it is an additional reason why every proper care should be exercised in minimizing the displacement or injury of this important structure.

The nerves distributed to the vessels of the omentum have their origin in the cœliac flexure. It is a safe inference, drawn from the anatomical construction of the omentum, to believe that it exercises an important rôle in the economy for maintaining in stable equilibrium the fluids of the abdominal cavity, and, if we consider it as a great lymphatic, ganglionic system, we may better understand its importance and value as a surgical factor. I have often wondered if, in a certain way, it may not also exercise a so-called phagocytic power in limiting infection of the abdominal cavity. Note in illustration the marvelous way in which an infected area is limited by its seeming conscious, thoughtful sacrifice; as, for instance, a limited infection from a diseased appendix or Fallopian tube. A portion of this great fatty apron has been wrapped around the diseased part and an enormous exudate of lymph cells has been poured out to wall off and shut in the offending member. There can be little question but that the reverse of this function is often true, and that, with the normal restoration of the omental circulation, the absorption of free sterile fluid in the abdominal cavity is greatly facilitated.

We know the reverse of this is also distinctly true and that when for any reason a vicious cycle of increased peritoneal effusion occurs, this goes on in development in a sort of geometric progression, dependent upon the disturbed venous circulation in the omental and mesenteric vessels. The relief of this pressure upon the abdominal venous circulation, even when the liver and kidney are the disturbing organs, is so great that sometimes the equilibrium of function may be restored. This, in a number of cases of rapidly recurring ascites, I have seen permanently corrected by keeping up free abdominal drainage for a considerable period.

There is reserved for the future investigator a rich field for the study of the pathologic conditions of the omentum. Scattered through the history of medicine there are isolated reports of marked pathologic changes which have caused surgical intervention; as, for example, cystic tumors. These are noteworthy on account of their rarity, and oftentimes convey very little real information, because of superficial investigation and imperfect description. Of one thing we may be assured, that such a complex structure might be expected to take on pathologic changes much more often than is the fact. When we consider the omentum as a great reticulation of lymph vessels, we should expect obstruction to the current and consequent dilatation of a lymph vessel or vessels, making single or multiple cysts by no means

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Obstetrics and Diseases of Women, and approved for publication by the Executive Committee: Drs. A. H. Cordier, W. E. B. Davis and Henry P. Newman.

rare. Again, when we recall the extraordinary vascularity of the omentum and its exposed position, spread out over the entire abdominal parietes, we should expect traumatism much oftener than has been reported.

Neoplasms may occur here as in any other part of the body, but as a matter of fact they are far more common as a secondary rather than a primal development. Colonies of the bacillus tuberculosis here planted thrive equally well as in other portions of the abdominal cavity, furnishing not seldom typical examples of miliary tuberculosis, although, in its incipient development, not so easily differentiated as upon the parietal peritoneum.

Dermoid cysts of the omentum have been described, but, of course, only in a comparative sense correct. However, it must be recognized that pathologic changes may supervene in a way to cause, through adhesions and a vicious cycle of circulation, a source of nutritive supply to the tumors of the ovary, or even of the uterus.

Cancer invades the omentum as the other tissues of the body, but is usually of secondary development. Sex plays obviously an important part in the relative frequency of pathologic changes of the omentum, since all abdominal diseases are of greater frequency in the female, because of the pathologic conditions of the reproductive organs.

Cystic tumors of considerable size have been reported of primary occurrence in the omentum of the male. A case of congenital multilocular cyst of the omentum is reported by W. J. Hearn.[1] Patient aged 8. Abdomen distended at birth, began to increase when six years old; twice aspirated. When admitted to the hospital abdomen measured in circumference 44 inches, weight of patient 93½ pounds. Operation. Origin of the cyst in the folds of the great omentum below the margin of the transverse colon. Patient made an excellent recovery. In two weeks after the operation weight was 49 pounds. Cyst and contents thought to have weighed nearly 50 pounds.

A. Jacobi[2] reports a cyst in the omentum in a girl aged 7. At operation a thin-walled, multilocular cyst was found which contained two quarts of straw-colored fluid. It was attached by two pedicles to the upper portion of the omentum. These were ligated and the patient made a good recovery.

Spencer Wells[3] reports a cyst of the omentum in a girl aged 4 upon which he operated. Large abdomen from birth. A fluctuating tumor which had been tapped. After removal the child remained in good health. There have been reported a number of cases of so-called hydatid cysts of the omentum. It might naturally be inferred that excessive fatty deposits are occasionally found in the omentum. These are rarely so pronounced as to become the cause of surgical intervention. Roberts[4] of Philadelphia reports such a case where there was also considerable free fluid in the abdomen. Dr. James F. W. Ross of Toronto, Canada, who has written the most valuable monograph[5] upon the omentum that I have been able to find, reports an operative case where a supposed tumor of the pelvis was "nothing more than the omentum curled upon itself like a rolled pancake and tucked down into the cul-de-sac of Douglas.

Injuries of the omentum are less common or serious than might be supposed. However, a considerable number of cases of serious hemorrhage from ruptured omental vessels have been reported. This may become so pronounced as to induce local necrosis, but it is very probable that most of the cases of so-called gangrene of the omentum have been associated with infection.

Laparotomy, undertaken for any reason a second time, frequently discloses adhesions of the omentum due to traumatism incident to the previous operation. Such observations are common. I have found adhesions more often occurring in the median line at the site of the incision in aseptic cases, leading me to the inference that sufficient care had not been taken in the accurate closure of the abdominal wound. Of course, in infective cases adhesions are the rule, due, as I think, in part to the protective uses which nature makes of the omentum already referred to. Internal herniæ may supervene and intestinal obstruction result in death unless promptly remedied. This produced by bands of adhesion or occasionally by the protrusion of an intestinal loop through a lumen in the omentum. I have operated a number of times where such conditions were found, and, unrelieved, death must have occurred.

Chronic changes occurring in the omentum are induced far more commonly than from any other cause, by the conditions incident to a more or less permanent incarceration of the involved part in slowly acquired hernia. It is a very common factor in the contents of every variety of hernia, although it often plays a protective part of the first importance in shielding the incarcerated intestine. The wise disposition of the omental contents in large old herniæ is often a very confusing and troublesome problem. As a rule, the abdominal opening should be made sufficiently large to admit of its careful examination. The infolded part should be carefully separated, perhaps delicately spread out upon a white aseptic cloth and examined. If so changed or deformed as to be considered a dangerous factor if returned into the abdominal cavity, it should be excised, after first neatly sewing across the uninjured portion by continuous sutures. If the part to be removed is very considerable, it is generally wise to protect from hemorrhage with a double line of sutures which permits of their application with a less constricting force, thereby minimizing the danger to the nutrition of the parts. Acting under the belief that for every reason the omentum is an important structure, in order to preserve as far as possible its physiologic uses, I have oftentimes gone to the extreme of conservatism and have intrafolded the doubtful portion between healthy folds of the omentum, retaining the same by light-running sutures. However, in a very considerable number of large, old inguinal hernias I have removed large pieces of deformed omentum, since it is safer than to return it into the abdominal cavity.

It is sometimes astonishing to note the extraordinary degree of dislocation of the abdominal contents into an extraneous hernial sac, and yet the life processes go on with so little seeming danger. In several instances I have seen the larger part of the great omentum, together with many feet of intestine, lodged in a slowly developing inguinal hernia. To a less degree, and yet sometimes of extraordinary development, this is true in umbilical hernia. Here again the omentum is oftentimes the most complex, difficult and troublesome factor in the surgical problem. Almost always adherent and deformed, it is wrapped about the intestine, involving it in a most confused and perplexing way. Here again the surgeon should make his opening so extensive that his field of inspection is ample, always being guided by the eye rather than by the sense of touch. Generally the incision is

1. Annals of Surgery, June, 1897.
2. New York Medical Journal, July 20, 1901.
3. British Medical Journal, June 14, 1890.
4. Medical News, Aug. 22, 1891.
5. Transactions of Pan-American Congress, 1891.

far better made to one side of the hernial tumor, which may be everted in mass, the constricting ring then carefully divided, and the problem studied in detail. Not infrequently considerable portions of the omentum must be excised, but here, as in every instance, of which I shall again make emphasis, the surgeon ought to examine carefully and suture every rent found in the continuity of the omentum before returning it to the abdominal cavity.

The omentum is a constant factor for careful consideration in laparotomy undertaken for any purpose; in every considerable pelvic tumor, except the fibroid growths of the uterus, and even here not seldom the omentum may be found as one of the organs demanding surgical supervision. Of course, by far the most common abnormality is that due to changes from adhesions, which were formerly considered evidence of inflammation. I have already referred to this remarkable, so to speak, self-sacrificing, protecting service taken on by the omentum. No matter how important the pathologic conditions of other organs which have called into requisition surgical intervention, after this work is finished, the omentum should be carefully examined and as far as possible restored to a safe condition and position before closing the abdominal wound.

One of the largest services incident on operation in the Trendelenberg position, to which I have never seen reference made, is the fact that the omentum by its retraction largely escapes manipulative injury. However, this may have a serious damaging result if the abdomen is closed with the omentum dislocated. On restoration to the horizontal position, the intestines naturally gravitate much more easily downward. For many years it has been my custom to unfold carefully and spread out the omentum until its lower border reaches within the pelvic cavity, carefully noting and correcting as far as possible any lesion it may have sustained.

In enormously large abdominal tumors, especially cystic tumors of the ovary, where pressure has become such a disturbing element to the circulation of the pelvic viscera, it is noteworthy to observe a source of danger, to which very little reference has been made, to-wit: a reflux in the tides of circulation, until there results a venous congestion. An enormous dilatation of the omental and mesenteric veins ensues, which acts as a distinctly disturbing element in the general circulation, inducing cerebral anemia and possibly death. Within a year I have seen one fatal case; a thin, emaciated woman of about 50. The tumor weighed over forty pounds. Almost no blood was lost in the operation and the case was noteworthy only from the gravity of the pathologic conditions. Death occurred within twenty-four hours from a slow failing of cardiac power and gradual cerebral anemia, seemingly caused by the enormous reflux venous currents, induced by the removal of the abdominal pressure. This was more or less obscurely recognized by the early operators, very likely brought about by a similar experience and probably induced the practice of a partial withdrawal of the fluid by tapping before the removal of the cystic tumor; advice that may well be considered worth remembering to-day in a certain limited class of neglected cases. These conditions were grouped under the general head of shock, a most unsatisfactory term, less often used than formerly.

The importance of the consideration of this subject is urged in the emphasis of a necessity greater than ever before, since in every town and city laparotomies, for a great variety of causes, are undertaken every day, which only a few years ago were exceptional and rare. Therefore, it becomes all the more important that the omentum should be carefully considered as a factor in the surgical problem, and if I may stimulate others to a spirit of research and thoughtful investigation, I have not written in vain.

I am assured that a general discussion of the subject by the many distinguished men whom I address will prove of great profit to the profession.

We speak reverently of miracles and venerate the power which produced them. We also say their age has passed, but when we investigate nature from the standpoint of science, how inadequate a miracle seems as the expression of the laws of God! Compare the revolution of the planets, the geologic structure of the globe, the ceaseless pulse beat of the tides, the transforming power of the seasons, as now seen, speaking into life the myriad forms of vegetable growth, the reproductive processes of the animal kingdom; the great Trinity of man's estate and his transforming at will of physical force into mental and moral power. None the less admirable are the recent victories of science in the hitherto occult realms of power. The invisible bacterial growths are controlled by laws as immutable as those which govern the starry hosts which ever sing as they shine, "The hand that made us is divine." It has been your privilege and mine to play an active part in the demonstrating of these laws which have proven so fundamental in making possible surgical intervention for the salvation of life.

Abdominal surgery may justly be considered the crowning glory of our art; triumphant demonstration of scientific principles practically applied, which makes the present generation the largest contributor to the history of surgery. No one man, no one nation can claim it in entirety, although our own country has furnished its full share.

Faithful students have contributed with painstaking, self-sacrificing care to this great monument to science. The knowledge of the rôle of the pathogenic bacteria, patiently wrought out by years of laboratory investigation, has been its foundation. As the generation has wrought its upbuilding, it has inscribed upon this memorial shaft the names of men who have rendered themselves immortal. You and I have known many of these modest workers, who have been active members of this Association. The names of some spring almost unbidden to our lips; however, we are living in a period even yet too near to do them justice.

This goodly heritage is yours, and may it not stimulate the coming generation to yet better endeavor to work out to safe solution other problems with the outlining of which we ourselves are familiar. The fields are verily white for the harvest, inviting the reapers who are to enter into a fuller fruition of our glorious present.

DISCUSSION.

DR. DANIEL T. NELSON, Chicago—This is a paper that should have notice. There are so many things that we have seen for a lifetime and yet do not understand. I wish to say only a few words about a few points, especially the importance of the omentum as a physiologic structure. It was years before I appreciated it in my surgery. I was taught, but given no reason for it, that it was a good way after you had gotten through an operation and were closing the abdomen to make sure that this apron was down in front. Later I practiced it, and learned that it was well when injuring the peritoneum to take a patch of omentum and to cover up my unfortunate surgery, but I did not appreciate until much later that it was one of two evils, and probably the lesser, to take away any of the omentum. Nature has made it for an important purpose, and

unless it is excessively enlarged or if the individual can spare some of it, you create another damage, perhaps a less one, by taking a patch and putting it where it is needed. It is important to bear in mind not to steal too much omentum, but it sometimes does hypertrophy, and it is well to get it out of the way. I well remember an autopsy made on a patient who died without apparent reason. There was plainly intestinal obstruction of some kind. A large tumor had been removed from the pelvis, and the peritoneum had practically all been taken away from the cavity of the pelvis. The intestines naturally gravitated there, and not only the intestines but unfortunately the omentum as well. The autopsy revealed that death was not produced by intestinal obstruction, but by a great mass of hypertrophied omentum, which had gotten into the pelvis and stuck there in trying to stop up the wounds of the peritoneum. Sufficient adhesions had been produced, so that the very little septic material that had been left in the bottom of the pelvis was so rapidly absorbed that the patient died from acute sepsis. The omentum acted as a perfect sponge and absorbed enough septic material to kill the patient rapidly.

DR. T. J. WATKINS, Chicago—I want to congratulate Dr. Marcy on this very important paper. Surgeons have paid too little attention to the omentum. Judging from the size and circulation of the omentum, it must be a very important organ. We all know that it plays an active part in protection against infection, and I trust that this paper will stimulate more careful study of the omentum.

DR. C. O. THEINHAUS, Milwaukee—Frequently after operations in the small pelvis the omentum may get adherent in this region and produce afterwards symptoms of vomiting and other gastro-intestinal disturbances by traction. I think that in some cases of so-called acute dilatation of the stomach after operation a fixation of the omentum causing traction on the colon and compression of the duodenum may be one of the causes of dilatation in a manner described in a case of Franke, after a so-called Talma-operation for cirrhosis of the liver. To avoid this accident and, furthermore, to avoid thrombosis, it is always advisable to let the patient lie in bed in a Trendelenburg position for 8 to 12 days, after operation in the pelvis. In other cases one has found after resection of the greater part of the omentum multiple hemorrhagic necrotic spots in the liver and stomach and even ulcer formation with vomiting of blood. In a case of umbilical hernia, where the entire omentum was adherent and lying outside of the abdomen, I removed the entire omentum near the colon. The woman developed symptoms later which I attributed to hemorrhagic infiltrations in the mucosa of the stomach. The wound showed no symptoms whatever of any infection and she got perfectly well. There is no recurrence of the hernia up to date, almost two years after the operation.

DR. FREDERICK HOLME WIGGIN, New York City—I congratulate the Doctor on his complete presentation of the subject, and would like to call attention to a point in the technic of abdominal surgery which I have found of considerable importance in gently replacing the omentum and intestines in their proper positions, and which tends also to prevent the formation of adhesions, to which the writer has not alluded in his paper, namely, the washing out of the abdominal cavity at the close of an intra-abdominal operation with saline solution and leaving it full of the same, the wound in the abdominal wall being closed without drainage.

DR. J. H. CARSTENS, Detroit—I always look on the omentum as our best friend. If I do a vaginal hysterectomy and see the omentum come down, I am generally pleased. I would rather see the omentum come down than the intestines, because when it does come down it means that there is a long omentum, and that it will take care of the case. It is our greatest friend. We could do very little without it. It patches up and hides some of our defective surgery. It is a great preventive of hernia, by forming adhesions, for it is not always bad if the omentum becomes adherent. The one danger is that if such a patient with an adherent omentum should in later years have some abdominal trouble, the omentum can not sweep over there as it ordinarily does. If we can keep it loose and movable and available in the future, we should do so, but in many cases we are obliged to use it and tie it up somewhere to assist us in saving the patient's life. Sufficient unto the day is the evil thereof.

DR. MARCY, in closing—I want to thank Dr. Wiggin for his suggestion. I know it is a valuable one. The dangers arising from injury of the omentum never occurred to me until I commenced my studies on hernia. In looking over my records, I found a hundred cases of fibroid operations, removal of large myomas, with four deaths, two due to intestinal obstruction from complication of the omentum. If we could look over the laparotomies done in this country during the last five years, thousands and thousands of cases, we should find that the omentum is a pathologic factor greater than has been believed. I am very sure that if I have succeeded in calling attention to the care with which the surgeon should handle the omentum after operative measures, I shall not have spoken in vain.

With reference to the removal of pieces of omentum, we have all done it, and sometimes without any great reason. If you have a large mass of deformed omental structure, it is natural to remove it. But, as your Chairman has just said, we should always endeavor to keep the omentum intact whenever we possibly can.

A NEW OPERATION FOR THE MORE SATISFACTORY REPAIR OF THE PELVIC FLOOR, WITH SPECIAL REFERENCE TO THE RESTORATION OF THE DEEP NIDUS OF THE PERINEUM.*

CHARLES A. L. REED, M.D.

Professor of Clinical Gynecology in the Medical College of Ohio; the Medical Department of the University of Cincinnati; Gynecologist to the Cincinnati Hospital and to the German Hospital.

CINCINNATI, OHIO.

The proper restoration of the pelvic floor implies not only the restoration of the injured structures to their continuity, but the re-establishment of their normal relations. The application of this principle implies, necessarily, a recognition of, first, the normal anatomy of the perineum, and second, the usual pathology of the injured structures. It would be manifestly out of place in this presence to consume either time or space by a presentation of the usual descriptive anatomy of the pelvic floor, but I feel that it is important to emphasize the well-established generalizations, viz.:

THE STATUS OF THE PELVIC FLOOR.

1. The pelvic floor consists essentially of two muscular layers: (*a*) The first consists of the bulbo-cavernosis, the transversis perinei, the sphincter ani externus with filaments from the pubo-coccygeus, all blending to form the external nidus of the perineum. (*b*) The second consists of the ilio-coccygeus, the ischio-coccygeus and the pubo-rectalis, the three muscles blending to form the one composite muscle known as the levator ani, while the levator ani, on either side of the rectum and vagina, in turn, blends by strong fibrinous intercommunication between those canals to form the internal nidus of the perineum. This internal muscular layer, with its nidus thus formed, occupies an oblique plane 1.5 centimeters above the external layer.

2. The essential retentive or supportive power of the perineum is resident in and depends upon these two muscular layers. The external layer is concerned chiefly with the sphincteric control of the rectum and the support of the anterior vaginal wall, including the urethra and the lower zone of the bladder. The second layer,

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Obstetrics and Diseases of Women, and approved for publication by the Executive Committee: Drs. A. H. Cordier, W. E. B. Davis and Henry P. Newman.

however, the deep one, as pointed out by Harris, consisting essentially of the levator ani muscle and the deep fascia of the pelvis, is the strong support or structure of the pelvic floor, the muscle itself having the ascertained power to sustain a weight of twenty-seven pounds.

3. In practically every injury of the pelvic floor, caused by parturition, the internal nidus of the perineum is destroyed, while in many the fascia itself is ruptured. This is equally true whether the injury is classified as partial or complete, superficial or deep, or whether in the absence of any laceration of the mucous or integumentary surfaces, the remaining condition is that that Goodell designated accurately as submucous laceration. This can be ascertained to be true in practically every case of laceration, whatever its extent or classification, by conjoined recto-vaginal exploration. With the index finger in the rectum and the thumb in the vagina, the absence of any intervening muscular structure can be readily detected.

Figure 1.

In the application of these three generalizations it is not my purpose to discuss in detail the usually recognized features of these various lacerations beyond recalling that, in the majority of superficial or partial lacerations, the injury extending externally down the cutaneous mesium radiates like the phalanges of a Y on the vaginal surface; deep or complete lacerations are prone to follow the median line not only upon the cutaneous, but upon both mucous surfaces; while, in that class of injuries properly designated by Goodell as submucous lacerations, but now less scientifically spoken of as the relaxed vaginal outlet, the separation of the levator ani in the recto-vaginal septum is always pronounced. As a result the levator ani muscle becomes a sling extending from the pubis around the rectum, its two longitudinal and parallel bellies being separated and easily separated still further by any pressure from above.

THE DETAILS OF THE PROCEDURE.

The operation illustrated in this connection is that for incomplete laceration—the form most frequently met with in practice. The technic as applied to complete laceration and to submucous separation of the internal nidus, is but a modification of that herewith presented, the changes being suggested by the difference in the character of the respective injuries.

The index finger of the left hand, protected by a finger cot, is inserted into the rectum and the perineum is made tense by a little downward traction from within the bowel (Fig. 1). One blade of a sharp-pointed scissors is then thrust through the skin at the apex of the cicatricial triangle and an incision is made by the same instrument, first toward one side and then the other, along the outer margin of the same cicatricial area. The

Figure 2.

apex of the flap thus formed is seized by hemostatic forceps and lifted up by an assistant while it is being dissected from the rectal side of the septum by the scissors. This dissection is carried to a depth varying from two to three centimeters. The hemorrhage induced by the invasion of the hemorrhoidal plexus is frequently active for a few moments, but unless an artery is divided, requires no further treatment than that by temporary sponge pressure. The dissection is then completed by separating the septum still higher by means of the index finger of the right hand. The finger is generally carried in to the depth indicated by Fig. 2, or until it can be hooked around the levator ani muscle, first on one side and then on the other. If the pelvic fascia can now be isolated and demonstrated to be ruptured, its separated margins are brought together and stitched by interrupted catgut sutures. The belly of the muscle is then drawn down into the field of operation (Fig. 3), first upon the right side and then upon the left. As the

muscle is thus drawn down and held for the time being first upon one side and then upon the other, it is transfixed with a handled needle, which is then loaded with silkworm gut and withdrawn. The suture thus first passed is held taut, as indicated in Fig. 4, by which means the two bellies of the muscle, one from either side, are held in apposition while the remaining transfixion sutures are readily passed. These are generally three or four in number. After they are thus passed, their ends are crossed over, one after another, loaded with the needle (Fig 5 A) and brought out through the deeper tissues and the skin (Fig. 5 B) thus, when tied, forming a figure of eight. The next very important suture (Fig. 5 C) is passed through the skin on the right side from side to side through the tip of the triangular flap—previously thoroughly trimmed of its cicatricial fringe—and from within outward through the skin of the op-

Figure 3.

posite side. The remaining sutures, but rarely required, are one in each phlange of the Y (Fig. 5 D), passing simply through the mucous membrane for the purpose of holding its margins in approximation.

The sutures are now tied, beginning below, by first exercising considerable traction outward on the ends with the object of tightening the internal loop and thus making effective the approximation of the deep muscular structures. The sutures are then tied externally in the usual way, care being taken not to tie them tightly enough to cut the tissues. Catgut may be employed, the intermuscular sutures being cut short and left buried, but my experience has shown that even with the most careful preparation this material sometimes absorbs before the retention power of the sutures can be spared. The kangaroo tendon is more reliable for this purpose. When absorbable material is thus used supplementary subcutaneous sutures may be employed, as shown in my "Text-Book of Gynecology" (p. 271). The silkworm gut should be left *in situ* about ten days. If the deep sutures are cut one day and withdrawn the next their removal is not attended with pain.

THE VALUE OF THIS OPERATION.

This operation I have found to meet every indication in the restoration of the deep muscular and aponeurotic layers of the pelvic floor. The technic differs, however, from that described by other operators, notably by Harris, for the repair of the injury. Harris' operation involved incision of the lateral vaginal walls, the isolation of the levator ani and its shortening by cutting a section from its belly upon either side of the vagina, and stretching together the ends of the thus divided muscle. This proceeding I have found tedious and unnecessary and, besides, the constant tendency of

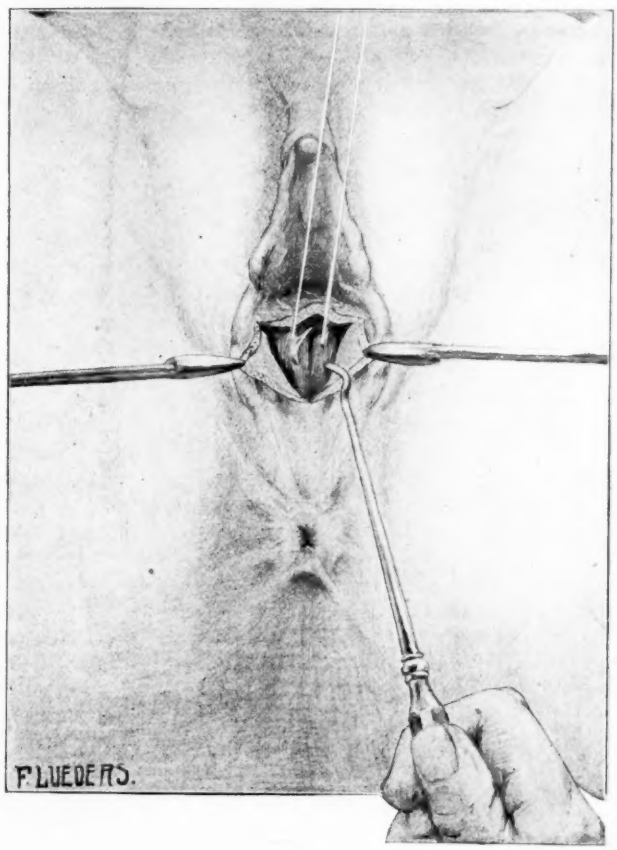


Figure 4.

the stitched-together ends of the muscle to separate is more than a menace to the success of the operation. In the event of its success, however, in the sense of union being effected, it does not in any sense restore the destroyed nidus of the perineum.

It is claimed, on the other hand, for the operation that I have described, that it restores the deep nidus of the perineum, and thereby gives to the pelvic floor a degree of structural integrity and functional power not attainable by other and especially by the more superficial operations.

DISCUSSION.

Dr. T. J. Watkins, Chicago—I disagree very materially with Dr. Reed as regards the nature of the injury that produces "relaxation of the vaginal outlet"; or what he classifies as incomplete laceration. The muscle in this injury that is principally involved is the levator ani; as Emmet pointed out years ago, and as Harris recently demonstrated by dissection. The injury is not a median separation, but a

distinct laceration of the muscle laterally to the vagina. It is either torn near its tendinous attachment or from the ramus. Consequently, I would contend that suturing these muscles together in the median line does not restore them to their normal condition, and that Dr. Reed's method of diagnosis for detection of injury to this muscle is incorrect, because he examines along the median line and does not palpate the muscle lateral to the vagina. What he accomplishes is also accomplished by the Hagar operation and Sänger's modification, which gives a fairly good pelvic floor by bringing the levator ani between the vagina and rectum, but will not stand the test of labor. The Emmet operation has been under observation for years and continues to be the operation of election by the large majority of gynecologists.

DR. WILLIAM H. HAUGHEY, Battle Creek, Mich.—The method of introducing these sutures in the figure-of-eight is all right, but I carry it in deeper, including more tissue in the suture. The trouble is in tying them, because the perineum being in the median line of the back is very tender, skin soft, brittle and poorly supplied with blood. Now, if you tie the

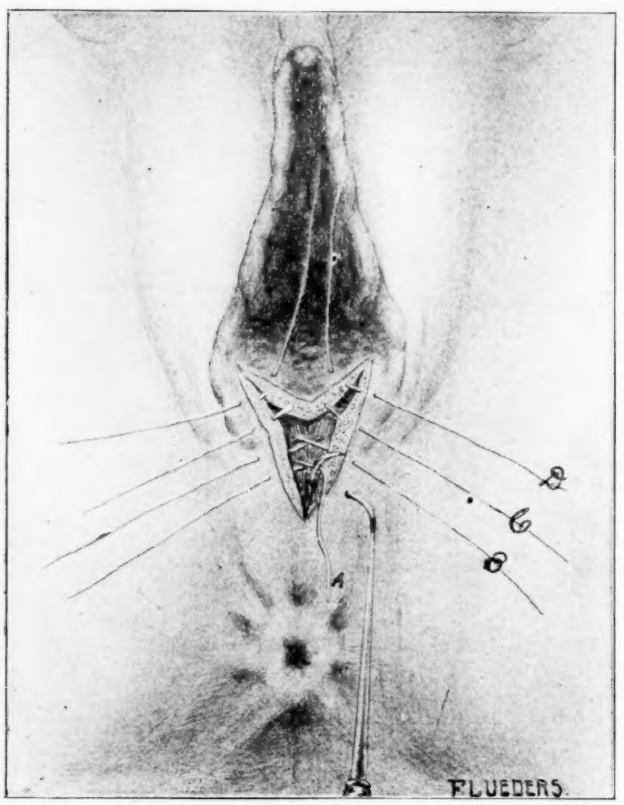


Figure 5.

sutures tight enough to hold, they will cut in too deep and stitches will be found in a bed of pus when you come to take them out. If you push the skin together and pass down over each end of the suture a little piece of rubber tubing and fasten it there with a perforated shot, you will avoid having the stitches cut into the perineum. There will be no sloughing, healing will go on as it should, and the stitches will do the work you intend them to do without any trouble.

DR. GEORGE H. NOBLE, Atlanta, Ga.—The most important feature in perineorrhaphy has been neglected to a large extent. It is claimed by many men that the chief thing is approximation of the muscles. It is an important matter, but not the most important. The point I wish to bring out is that the strength of the perineum lies in the fascia. Dissect the different layers of the fascia, and approximate them edge to edge, just as you do the abdominal incision. I do not attribute very great strength to the union of muscles when brought together side to side; that is, fibers parallel to the line of contact, as they will separate in course of time. For instance, note the separation of the recti muscles of the abdomen when not supported by the aponeurosis. So with the perineum; the levator ani muscles will pull apart unless reinforced by the fascia. The interlacing fibers that go to make up the perineum in part are torn through, consequently the attachment between these muscles when sutured as commonly done is nothing more than lateral attachment of bands of muscles which will soon separate by the strain produced by displacement to the median line. To this is also added the weight of the dragging uteri, subinvoluted vaginæ and strain in constipated subjects. All of which have a tendency to force the muscles apart.

It is easy to dissect out the fascia by introducing the index finger and thumb within the vaginal orifice, catching the edge of the levator ani muscle, drawing it out and forward with hooked forceps. Then split the sheath of the muscle in the direction of the fibers by blunt dissection (with sharp-pointed compression forceps). The fascia overlying the muscle may be taken up with the catgut sutures which close the mucous membrane of the vagina. Approximation of the muscles may be done with kangaroo tendon. Put two or three tendons around them to prevent formation of dead space. On the lower side of the muscle you find deep fascia, and beneath it the triangular ligament which can be traced up and down and sutured in front of the anterior wall of the rectum, pushing it back if there is a rectocele, instead of anchoring the same on the crown of the perineum. The next layer of sutures brings together the bulbo-cavernosa, and the superficial sutures close the skin and superficial fascia. I have found that this gives better results than any other operation I have attempted, and I have tried a great many.

DR. HENRY O. MARCY, Boston—I am very glad that Dr. Reed has brought this subject up, especially as I have always been interested in it. As Dr. Noble just said, the approximation of the fascia is essential to the restoration of the perineum. How can it best be done? Not unlike Dr. Reed, I put two fingers in the rectum, the sphincter having first been stretched, and I keep them there until the end of the operation. The torn ends of the muscles are reunited by continuous tendon sutures, another line of continuous sutures closes the wound externally, and the operation is ended. It really is easy. Some time ago a gentleman from abroad was looking through my hospital, and I asked my matron, who has been with me for sixteen years, how many perineums had been lost since she had been with me. She told me not one. I think she is correct. It is a simple and safe operation, aseptic, and the woman is restored to the appearance of virginity if desired, because the posterior border of the vagina can be reconstructed into a hymen.

So far as burying the sutures is concerned, this must be aseptic. The work must be accurate, and when these two purposes have been accomplished, I promise that the reconstruction of the perineal structures is complete. My distinguished friend, Emmet, did good work, but failed to express the essential points in a precise and clear description, although his results were usually excellent. Keep these anatomic factors in distinct differentiations and restore the few sundered structures aseptically and you will have no trouble in reconstructing the perineum.

DR. SETH C. GORDON, Portland, Maine—Perhaps the theory of Emmet may have misled a great many people, so that they do not do Emmet's work, but those of us who watched him doing his early work, as did Dr. Marcy and I, believe that if the work is done as Emmet did it, with the exception of the silver wire, you have a perineal operation which can not be beaten by any modern method. I have seen cases I operated on twenty-five years ago that are just as firm and solid now as they were before the woman ever bore a child. A pupil of mine told me that he was called to see a case he remembered seeing me operate on when he first began his student life. He said it was examined by several people and they were willing to swear that the woman never had a lacerated perineum.

DR. J. H. CARSTENS, Detroit—I must congratulate the Doctor on his paper, but I think we ought to go a little farther: simply use a buried suture, sterilized catgut or kangaroo ten-

don and put it on one side or the other. Sometimes you must work away up on one side, sometimes more in the center, then again on the other side. I have not used the silkworm gut or silver wire suture for ten years. I would consider myself a fossil if I did such a thing, as a rule.

DR. REED, in closing—I thoroughly appreciate the researches made by Dr. Harris regarding the anatomy of the pelvic floor and the pathology of injuries, etc., since I have had great pleasure in giving prominence to him and to his excellent work in a text-book that I had the honor to issue during last year. It does not follow, however, that the last fact has been discovered regarding these structures, or that the final conclusions have been drawn from the facts already known. Thus, I have personally made a series of dissections of the vaginal perineum and have found muscular structure pronouncedly developed in the area that I have indicated, namely, the perineal nidus at the level of the levator ani. Therefore, when it is stated here that the levator ani muscle exercises no function in that relation the gentleman who makes the declaration simply indulges in a theoretical statement that is advanced for no other obvious reason than to bolster up a preconceived error. It is certainly true that following injury to the muscle its decussation fibers can not be restored to their original lineal arrangement, and I have certainly not contended that they can. While this is true, I do contend, however, that by transplanting the levator ani muscle from its acquired abnormal position on either side to its relatively normal position in the recto-vaginal interval, it is easily practicable to accomplish three very important things: The first is to restore the structural integrity of the perineum proper; the second is, in effect, to shorten the muscles that are elongated or relaxed, only by suture of their mesial separator, and third, to restore back the functional power of the pelvic floor. The permanency of this operation—of this transplantation—is secured by the fact that it does involve the transplantation of the muscle. These are retained *in situ* for a considerable time by non-absorbable but removable suture material, and they are thereafter kept there by the surrounding cellular tissue that is deposited in the process of repair. This prompts me to observe in reply to Dr. Marcy's suggestion, that the only trouble I have had with this operation has come from the use of the absorbable sutures. They have invariably proven to be too absorbable notwithstanding the modern methods of preparation. Theoretically, I look upon the buried animal suture as the best and, except in this operation, I rarely if ever employ anything else. In reply to Dr. Noble I wish to call attention to the fact that the restoration of the fascia—when it can be found—is contemplated in the operation as I have described it. I am sorry to say, however, that I am not always able to find it with the facility that he has described. In conclusion, permit me to say that this is the first operation that I have seen not only in my own hands but in the hands of any operator that seemed logically to fulfill every indication of the case, and that is demonstrably permanent in its beneficent results.

CHRONIC INFLAMMATION OF THE UTERINE APPENDAGES; ITS TREATMENT BY MERCURIC CATAPHORESIS.*

G. BETTON MASSEY, M.D.
PHILADELPHIA.

There are two classes of cases that tax the patience of the general practitioner to an extreme limit, and too often result in intervention that is ever afterwards regretted by the patient. I allude to instances of catarrhal inflammation of the Fallopian tubes in young women, usually monolateral, with more or less involvement of the ovary, as one class. The other class consists of chronic invalids who have at some previous time suffered from an acute attack of pelvic peritonitis, and in whom a physical examination reveals a firm agglutination of the peritoneal surfaces of the pelvic organs, together with a muco-purulent discharge from the upper genital tract. The clinical history of both classes of cases shows that they are etiologically identical with an important difference in their present condition, the second class representing the first after an acute attack caused by more or less traumatism, or other agency, has been superadded. The nature of the affection in both cases remains, however, the same, for we have essentially a mere inflammation to combat, and in the chronic stages to which I refer exclusively the major portion of the affection remains centered in the mucous membrane of the tubal tract, the serous surfaces being merely agglutinated.

The question of what shall be done for these semi-invalids is one of much moment. I restrict consideration to the semi-invalids, for in the presence of the indications of a closed abscess cavity in any portion of the pelvis by the occurrence of a slightly elevated temperature, the case is regarded as amenable only, and properly, to one of the several surgical procedures so well known to you.

That vaginal applications of electricity will relieve and secure a practical cure of many of these inflammatory sequels often after hot water and counter irritant swabbings have failed, is well known to the writer and to many other physicians, but the treatment has the disadvantage of tediousness, for the remedy can not be applied in force to the diseased spots, but only indirectly through the vaginal wall. This remedy has, moreover, been neglected in these conditions by those expert in its use by reason of a misinterpretation of a dictum of Apostoli, who advised most properly against all intrauterine applications of electricity in the presence of tubal or ovarian inflammation. An equal contra-indication to all other intra-uterine medication exists, of course.

It will be observed that these statements leave the way clear to vagino-abdominal applications of electricity in all peri-uterine chronic inflammations, provided the purulent or muco-purulent discharges possess a drainage outlet. It is to an improvement in this vagino-abdominal application of the galvanic current that I wish to call attention, in which the electric current is made to carry a microbicide, that, by repeated interstitial diffusions, may reach and sterilize the germs of inflammation within the tube without detriment to the intervening vaginal wall, and that will at the same time assist phagocytosis by tissue stimulation. The agent selected is the electrolytic salts of mercury, manufactured and diffused simultaneously by the current by simply coating a metal positive electrode with quicksilver and pressing the instrument against the vaginal wall nearest the diseased structures. The circuit is, of course, completed by the usual abdominal pad, and the electrode, which may be of brass,* should be large enough to avoid undue irritation of the vaginal mucous membrane.

The profound local effect of these procedures when repeated daily or tri-weekly for six or eight weeks is instanced, not only in a recession of the symptoms and improvement in the physical conditions, but also in a singular effect on the ovarian functions. By the second month the patient will notice a diminution or even suppression of the menstrual flow. This phenomenon

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Obstetrics and Diseases of Women, and approved for publication by the Executive Committee: Drs. A. H. Cordier, W. E. B. Davis and Henry P. Newman.

* Experience in more recent cases than those detailed below indicates that a zinc, ball-shaped electrode to hold the mercury is more quickly effective than the brass electrode.

has been so regularly observed in the patients treated as to be significant. Its probable explanation is a deterrent action on ovulation. As the applications proceed, nevertheless, nature asserts herself and normal periods appear as usual, though somewhat scant during the further continuance of the applications.

Concerning the details of these applications I should say that the active electrode is always positive, of course, as it is from this pole only that the electrolyzed mercury is diffused as an oxchlorid, united with the oxygen and chlorin of the tissues. When the mercury is used on a brass surface some of the brass metals are diffused, but very little, indeed, the electrode often emerging from the application quite denuded of the mercury. About sixty milliamperes for five minutes, daily or tri-weekly, may be used with a large olive-shaped electrode without undue vaginal irritation.

CASE 1.—A young married woman* was about to have an operation for the removal of a boggy tumor in the left ovarian region that was the seat of constant pain. A similar tumor had been removed from the other side by abdominal section six years before. Her general condition had not been improved by the previous operation; the patient, in fact, claimed that she had been made worse by it. After six months of somewhat interrupted treatment, the tumor decreased and finally disappeared, coincident with a complete restoration of her general health. The pelvic functions in particular were restored to a healthy condition that the patient never enjoyed before, her early history having been menorrhalgic. During the progress of this case several sudden flows of watery leucorrhea were noted, making it probable that the tumor was at least partly tubal.

CASE 2.—A young lady with constant pain in the left tubal region was first seen June 19, 1901. The pain was stated by her to have followed a curettage and pessary wearing, the former operation having been done by a skilful gynecologist two years before. The affected region was boggy and tender to the touch, and she suffered from a very profuse and purulent leucorrhea.

Under the treatment described, the tenderness and tumefaction slowly lessened, and though the leucorrhea had not entirely ceased at last accounts, it is evident that the possibility of an unsexing operation was entirely banished.

CASE 3.—Miss E., age 35, with a history of leucorrhea and menorrhalgia previous to the removal of the left ovary, two years before I saw her, came under observation September, 1901, saying she had as much menstrual pain, intermenstrual pain, backache and local tenderness in the left ovarian region as before the removal of the ovary. The leucorrhea was especially abundant. She improved steadily under the treatment described and is now in excellent health.

During the progress of both of these cases there were several missed periods, and in the last case one disheartening return of menstrual pain, though she was able to pursue with ease her occupation of dressmaker, including prolonged use of the sewing machine.

CASE 4.—A married woman, 31 years of age, has been a semi-invalid for six years, at which time she had an acute attack of salpingitis and pelvic peritonitis that left the pelvic organs firmly adherent. Tumefaction existed in both ovarian regions. A constant pain was complained of in the left ovarian region, and there was a copious purulent discharge from the uterus.

During the treatment of this case several periods were passed without flow, though the symptomatic improvement pursued the usual course. The final result was a symptomatic cure, examination showing also that the organs were more mobile and tumefaction lessened.

DISCUSSION.

DR. O. S. PHELPS, Battle Creek, Mich.—I would like to ask the Doctor whether, in using a current of sixty-five milliamperes, with the electrode against the vaginal wall, he does not get severe escharotic effects. My experience has been that even with a current of twenty-five milliamperes I very frequently get an unpleasant eschar in the vagina. I would also like to ask him whether he has used the mercurial treatment intra-uterine, and, if so, with what result?

DR. J. WESLEY BOVEE, Washington, D. C.—I am sorry that there is not more pathology given, and less symptomatology by our electro-therapeutists. We hear masses spoken of, but no mention is made as to what they are. In the first case, in which one appendage had been removed and in which an enlargement appeared subsequently on the other side, the operation was probably advised, but we often find large ovaries in which hemorrhage occurs, and in which an operation is thought of. These cases go on for four or six months, fatty degeneration of the vessel wall occurs, and if the ovary is not removed, the patient continues practically in a state of semi-invalidism. If that was the nature of the trouble in the case mentioned by the Doctor, it is easy to see why such a treatment would relieve her temporarily. Suppose it is a dermoid cyst? Will this electric treatment remove it?

DR. MASSEY, in closing—It has been objected that an exact diagnosis was not made in Case 1. Why should this woman submit to an operation in order to determine the nature of that lump? Its true nature had already been revealed by the previous operation on the other side. If it were a dermoid cyst, for instance, electricity would not do her any good; if an inflammatory swelling, it would cause its absorption. The gentleman who did the first operation on the other side also advised that this lump be removed. His assistant measured the tumor while under my treatment unknown to me and was the first to detect diminution in size.

With regard to erosions produced in this treatment, I always notify the patients who receive daily treatment to tell me when soreness appears. Then I substitute some other form of treatment for a few days, after which I go back to the original treatment. A rest of a week usually clears it up entirely. The cause of the erosion is usually too small an electrode. It is yet a question with me if the zinc-mercury electrode is not superior to the brass-mercury electrode in this work, giving quicker results.

* The details of this case were given in the Journal of Advanced Therapeutics, January, 1902.

ORAL HYGIENE.*

GEORGE F. EAMES, M.D., D.D.S.
BOSTON.

To secure a healthy condition of the human mouth and maintain it in that condition involves much, not only in the variety of methods by which this may be accomplished, but in its beneficent results, not alone to the oral cavity itself, but to the entire organism.

These considerations may be classed under two heads, viz.: methods, and results. Let us first consider "results," that is, to put it in the form of a question, what results are desirable in order to secure the one grand achievement, a healthy mouth, the accomplishment of which underlies the whole practice of dentistry.

As one of the first results, we may seek to obtain clean teeth, and by that we mean teeth that are clean—clean, not alone for the sake of their appearance, but with the object of improving their structure, of preventing decay, of invigorating adjacent tissues, and of securing the beneficial results which will come to other organs and to the entire system.

The idea has prevailed too generally that the mouth-cleansing done by the patient, that is, the cleansing of the exposed surfaces of the teeth, and other accessible portions of the mouth, has no influence over the inaccessible places between the teeth. This the writer believes to be erroneous to a considerable extent, for the

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Stomatology, and approved for publication by the Executive Committee: Drs. G. V. I. Brown, M. H. Fletcher and R. R. Andrews.

reason that surrounding organs and tissues being in a state of health, contiguous parts must partake in some slight degree of the vitality and resistance which obtains in the healthy tissue. On the other hand, if those parts accessible to the patient are in a state of disease due to neglect, it follows that in some of the five ways in which disease is transmitted from one part of the body to another, it will travel to those parts which can be reached only by the dentist, thus accelerating decay there, much to his discomfort.

The healthy mouth will not emit a foul odor. By this is not meant the temporary odoriferous breath which is occasioned by partaking of the "festive" onion, or other articles of food or drink.

What is known as a "bad breath" is caused by a putrefactive process going on somewhere. Our object should be to locate this and remove the condition if possible. Decay of the teeth, alveolar necrosis, destructive inflammation of the gums, mal-occlusion and loss of teeth are at once conspicuously apparent to the eye and need no comment, but those horribly offensive masses that are often lodged in the crypts of the tonsils, are frequently overlooked. And still more remote and difficult to observe are nasal polypi, ozena, the foul secretions and lodgments which present in the pharyngeal tonsil and other chronic inflammatory conditions of the nasal and post-nasal space. All these affect injuriously the oral cavity, by the mingling of secretions, by the transmission of bacteria, by the extension of the inflammatory process by means of continuity of tissue, and more remotely by the depreciation of the general health which must ensue.

The mouth is a swift and sure indicator of many general diseases, and especially of gastric derangements which are manifested not only by the oral sensations of the patient and the appearance of the tongue, but by the condition of the saliva. The ropy and offensive condition of the saliva has often been noticed by the writer in connection with diabetes, and gouty and rheumatic conditions, and he much appreciates the statement of Michaels that the saliva varies greatly in the facility with which putrefication takes place in different specimens. Indeed, for the great advance in our knowledge of the saliva, of the way in which it is influenced by abnormal conditions, and of the use which may be made of it in the diagnosis of diseases, very great praise is due to Dr. Michaels of Paris.

It is also a cause for much satisfaction that the furtherance of this important work is in such able hands as those of Prof. Edward C. Kirk of Philadelphia.

That the oral secretions may become so vitiated as to constitute an important factor in producing decay of the teeth and disease of the structures which support and surround them, will go undisputed, as will also the proposition that these secretions may be controlled to a great extent by systemic and local treatment, thus mitigating the evils just mentioned.

The tongue is often covered with infectious material, and when deeply fissured forms a surface not easily kept clean.

There are also many general diseases which contribute either wholly or in part to the above-named pathologic conditions, or oral disease may be responsible for the general condition.

William B. Keyes of London has contributed valuable information on this subject. He enumerates several cases in which injurious effects were produced locally upon the stomach by means of infectious material from the mouth, which was constantly being swallowed. He also cites cases illustrating the systemic effects resulting from the absorption of toxins. It seems appropriate here to call attention to the necessity for the education of the physician dentally and for the education of the dentist medically, and for consultation between the medical specialist in dentistry and the medical specialist in those conditions which have a pathologic relation to the oral region.

It is not necessary to enlarge upon this subject before this section of the American Medical Association. You are all wise, therefore the word which I have spoken is sufficient. In fact, the writer wishes to avoid making a lengthy paper by repeating much that has been written on oral hygiene, but rather to give, as far as possible, the newer thoughts, relating especially to treatment.

Let us now consider the methods in the treatment of the various conditions which have been named in the foregoing portions of this paper.

The patient on rising should rinse the mouth several times with water and follow this by brushing the teeth, using brushes, powder and washes selected by the dentist. The teeth should be brushed for three minutes, or for a length of time suggested by the dentist as a result of his knowledge of the needs in each particular case. The patient should have several brushes, one containing rubber bristles. The cereal powders suggested by Dr. M. H. Fletcher seem to possess qualities which should commend them highly. The teeth should be brushed in all directions, including a rotary motion, with the object always of removing any foreign substances clinging to their surfaces.

The brush should be wet with an antiseptic wash, and plenty of powder should be used. It has been advocated that the brush be used dry, but of what advantage can this be? It will, after a little use in the mouth, become wet in some degree, and to use it in this pasty condition would be neither the wet nor the dry process. The dry brush with powder would, with extra power, remove particles from the exposed surfaces and would produce a high polish, but parts not receiving this extra force would not be cleansed so well as by the wet process, provided enough powder is used and the bristles of the brush are sufficiently stiff. The gums also should be brushed, but for this purpose, in the writer's opinion, a brush with rubber bristles is best, using it wet either with antiseptic wash or with vaselin ℥i, menthol grs. iii. If the condition of the mouth requires it, the gums may also be rubbed with the tips of the fingers on which the above preparation of vaselin has been placed. After this, especially at night, the following preparation may be pushed in between the teeth with the balls of the fingers:

℞.	Vaselini	℥i	30
	Ceræ albæ	℥ss	15
	Hydronaphthol	grs. xv	1
	Ol. cinnamonis	gtts. ii	12

Finally, the mouth may be rinsed with some antiseptic solution.

Toothpicks may be used after meals, and may consist of wood, quill or of metal. Gold toothpicks, properly shaped, are the best in the writer's opinion. Careful instruction, however, should be given the patient as to the proper use of these agents, pointing out the danger of wounding the gums, of leaving particles of wooden picks between the teeth and of using too much force with the metal ones.

Besides these the patient may use the stick and pumice, he being properly instructed in such use. This may not be indorsed by all practitioners, but the writer has often averred that the possibilities of what the patients may do for themselves under proper advice and in-

struction are very far from being reached. One patient in particular, who had been following my advice in this matter, said, on being reminded of a coming appointment, "There will be nothing to do. I'm a regular Fiji Islander," exhibiting the stick which he had been using. We had previously been talking of the custom of the South Sea Islanders who use their spare time in rubbing their teeth with a stick, and of the benefit with which Americans might follow their example.

The writer has advocated in the past the cleansing of the tongue as a part of the necessary mouth toilet. He wishes now to modify his statements on that subject. He advises that the tongue be cleansed when necessary, by means of a brush with rubber bristles, and never with the stiff hair bristles which have been used for cleansing the teeth.

For diagnostic purposes it would seem that any coating or deposit on the tongue should be left undisturbed; and when a diagnosis has been made, the scientific method of cleansing the tongue would be to correct the systemic and local conditions which caused the deposit. Meanwhile, if deemed necessary, the local cleansing of the tongue may be carefully done.

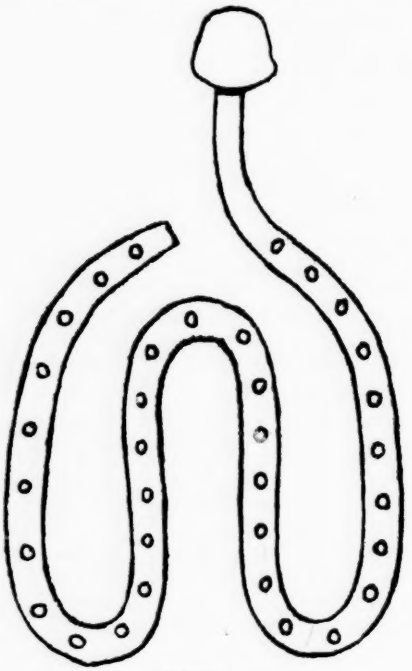


Figure 1.

The disadvantages of scraping or scrubbing the tongue, as far as the writer has observed, are: (1) the danger of getting bristles into it and causing inflammation and distress, and (2) the liability of infecting the tongue by the penetration of bristles loaded with bacteria in proportion as this organ needs cleansing. Small fissures or denuded surfaces are especially liable to become infected.

The tongue should be self-cleansing, and while it is not possible, perhaps, under the high state of so-called civilization in which we are living, to bring about this desirable condition, yet much may be done in this direction by prescribing foods requiring prolonged mastication and use of the tongue; in fact, by restoring its function. It is the *use* which is made of an organ which largely determines its hygienic condition.

If one must have liquids with food, let him take it after swallowing the food; he will then be obliged to masticate in order to make it possible to swallow.

The tongue, the mucous membrane of the mouth, and the gums are extremely sensitive to general disturbances, and often show the effects of a remote pathologic condition long before any other symptoms are manifest, and, indeed, sometimes these oral expressions of disease are the only ones which may be recognized. The dentist may now step in to do what the patient cannot do, and he has a serious and important task to perform, for upon it depends to a great extent the physical welfare of the patient.

The spraying of the mouth and teeth with antiseptic solutions by means of compressed air, the use of stick and pumice, the application of silver nitrate, the filling of cavities, the removal of deposits and treatment

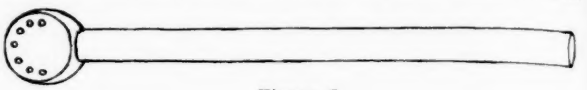


Figure 2.

of the gums, the correction of irregularities, the restoration of lost teeth, and the treatment of the various pathologic conditions which may occur in the mouth are all familiar operations, and the writer would only urge that they be well and thoroughly done and leave it to the conscience of the operator.

Some of these operations and treatments, the writer thinks, may be improved; for instance, in cleansing and polishing between the teeth, he has used instruments of his own design, with thin gold blades of various shapes, so very thin that they may be passed between or nearly between all teeth. These are dipped into some antiseptic solution, then into powdered pumice and carried between the teeth, back and forth, first from the

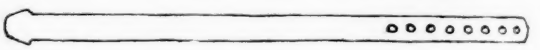


Figure 3.

labial or buccal side, and then from the lingual until the approximal surfaces are clean and smooth. These instruments can be carried where no stick can be used, and, in the writer's practice, this is a distinct advance over his former methods of treating these surfaces.

When the breath is impure and the cause is not to be found in the teeth and surrounding parts, the tonsils should be inspected, and if pockets exist in the faucial tonsils they should be cauterized and the organ reduced in size if necessary. If adenoids are present the cause may exist there, and if so the redundancy of this tissue should be removed. The nose should also be examined

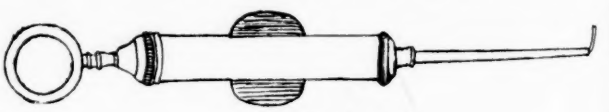


Figure 4.

and polypi, or catarrhal conditions should be treated. The cause of an impure breath may be very remote, and thorough examination of all the visceral organs should be made until the original cause is found. In these cases it is imperative that there should be a co-operation between the physician and the dentist.

In the treatment of inflamed conditions of the gum as well as for cleansing purposes the writer has devised douches of various forms which conduct water at a temperature of 110° F. to the mouth. (Fig. 1.) This is kept up for ten minutes, the patient holding the head over a fountain cuspidor or bowl while the water runs out of the mouth. This idea was suggested to the writer while he was taking a shower bath after a hot tennis match at Longwood. The water comes from the hand

hose with great force, and the stream was directed into the mouth, cleansing it most thoroughly and giving a delightful sense of comfort.

For the purpose of injecting a paste into pockets or between the teeth, the writer has also devised an ointment syringe, the piston of which is driven by means of a screw. (Fig. 2.)

And now a word in relation to all that has been written regarding oral hygiene in the public schools. The dental examination of pupils is of undoubted value, but they seem to be regarded merely as material to be turned over to the dentist by the board of overseers.

However destitute parents may be, they have the rights of individuals, as citizens, as fathers and mothers, which should be respected, and their consent, not the pupil's, should be asked before a dentist, not of their choosing, shall insert instruments or fingers into their children's mouths in the course of the examination of a hundred others. The father of small means has the right to ask that the same or equivalent antiseptic precautions be used for his children as for rich private patients, and his ignorance of these matters should be no reason for depriving him of the privileges belonging to any citizen.

Although many of the before-mentioned subjects have been treated briefly and perhaps inadequately, your essayist now comes to a stop because "a wise man is like a spring lock, always more ready to shut than to open."

31 Beacon Street.

DISCUSSION.

Dr. Vida A. Latham, Chicago—I think all of us are familiar with Dr. William Hunter's paper on "Oral Sepsis," a paper which has done more, I believe, toward uniting the medical and dental professions than any other paper ever written in the history of medicine. It is quoted all over the world, showing the great importance of noting oral sepsis. I would also like to call attention to a condition in that curious disease known as pernicious anemia. There we get a most peculiar glossitis, stomatitis, a condition that is so characteristic as to be almost one of the diagnostic points in pernicious anemia. We can also get from the lymphatics of the tongue an almost pure culture of the *Streptococcus longus*.

Dr. E. S. Talbot, Chicago—The essayist says that a perfectly healthy mouth will not emit odor and speaks of decomposition of food about the teeth producing foul odors, etc. I do not quite agree with the statements. The amount of food which collects about the roots of the teeth is very small. Again, the mouth may be healthy but there may be odor from autointoxication due to indigestion or to the non-elimination of effete matter. In cases of interstitial gingivitis or alveolar pyorrhea the worst forms of odor are found. In a great many teeth which I have cracked the odor was frightful and yet the pulps were still alive. In cases of extreme absorption of the alveolar process with exposed tubuli the odor is also bad.

In the treatment I must take exception to the use of a soft or wet brush. My experience is, that there is not a brush made that is sufficiently stiff. In order to have a healthy mouth gums must be massaged with a stiff brush. I am glad to hear the protest regarding the examination of the mouths of school children. The habit of examining the mouths of these children without thorough cleansing of the fingers is abominable.

Dr. M. L. Rhein, New York City—Dr. Eames speaks of three minutes being advised for brushing the teeth. I insist that my patient shall give from four to five minutes to the brushing. I think the average patient gives about 30 seconds to this important matter, and I am accustomed to laying down a law that must be rigorously observed. I agree with Dr. Talbot that the bristles of a brush can not be too hard. I instruct my patients to use the flat sides on the gums as near the roots as possible in order to stimulate the capillaries of the gum tissue. Recession of the gums or necrosis of the tissue can be greatly retarded if the tone of the tissue is kept up by proper massage. This point I especially emphasize in my instructions to assistants, as to the necessary directions to be given patient in oral hygiene.

Dr. G. V. I. Brown, Milwaukee—We all have our own ways of accomplishing the same results. The broader view of the paper is its significance in relation to the prophylactic feature. I want to correct what may appear to be in print, as I am sure it was not intended to be—a protest against the examination of school children. Very little has been developed out of these examinations, yet there is a work in this direction which ought to be looked after. I think many of the ills of young persons' future lives could be avoided by proper attention to this examination. Matters pertaining to nose and mouth breathing and the general disinfection of the mouth are of the greatest importance. Much could be done in checking epidemics of diphtheria and the prevalence of tuberculosis by insisting that a large vessel of a cheap, suitable disinfectant be placed at the door of the school-room and the children made to take a mouthful of the solution and hold it in their mouths for a few minutes. Whatever may be done with the sputum, by legislative ordinances against spitting, the use of spit-cups, etc., it is obviously true that the destruction of bacilli before they get into the air would be, if practicable, a better and the only true prophylaxis.

Dr. A. E. Baldwin, Chicago—I believe practical results are to be obtained by anything that will properly cleanse the system and promote a healthy condition of the mouth. It seems to me hard to determine whether odors come from within or beyond the mouth. I think the fears regarding tuberculosis are carried to the extreme. I thoroughly believe that tuberculosis is a great scourge and that all possible should be done to prevent it, but when it is realized that during the life of the human race it is estimated by careful investigators that fully 70 per cent. of the people who attain adult life have sometime during their life tubercular trouble and get well, the disease does not seem so hopeless as might at first be considered. I think care in the disposition of the sputa will bring the best results in preventing the spread of the disease. I am a thorough believer in cleanliness in any way it can be accomplished.

Dr. Eames, in closing—In regard to the healthy mouth not emitting a foul odor, I would admit that the mouth may be the outlet of an odor that may come from a distant part, but if that part is diseased, it is a question in my mind whether the mouth can still remain in a perfectly healthy condition, the oral cavity being so readily affected by abnormal conditions in other parts of the body.

The brush I leave to the discretion of the dentist. The idea was to make a distinction between the wet and dry brush. I believe we can cleanse the teeth better with the wet brush if the bristles are sufficiently stiff and plenty of powder is used.

ETIOLOGY AND TREATMENT OF MIGRAINE.*

J. M. AIKIN, M.D.

Lecturer and Clinical Instructor in the Medical Department, Nebraska State University.

OMAHA, NEB.

Of all the common and much-dreaded nervous diseases we recognize, none are less perfectly understood than migraine; nor is there any other nervous disorder which is so disastrous to the physician's ability for effectual treatment. Under the title I wish to be understood as excluding neuralgia, neuritis, headaches due, proximately, to improper alimentation, nervous exhaustion or brain fatigue. I would exclude the head pains as not migraine that are cured by merely correcting ocular or nasal abnormalities.

The causes for headache seen through the speculum of the gynecologist and proctologist are not a few; and the many radical cures effected by their rational treatment are glowing tributes to medical progress; but

* Read before the Nebraska State Medical Society, Omaha, May 6 to 8, 1902.

these headaches are not true migraine. The uric acid diathesis is a step in the right direction, but even Haig, its foremost advocate, has not reported his own case of migraine as cured by using alkalithia. It is easy to say what it is not, but difficult to define what it is.

HEREDITY AS A FACTOR.

By far the most frequent and constant individual etiologic factor in migraine is heredity. Clinical facts teach that transmitted conditions continue throughout many generations and render easily possible the evolution of migraine under suitable conditions. Just what these degenerative stigmata are we do not know, but there is a preponderance of evidence locating the disorder in the nervous system. I believe it has a pathologic entity susceptible to and having an affinity for certain toxic elements in the circulatory system. The nerve cells, bathed in the life current, hold out against these ptomaines until their cumulative strength, overcoming the normal resisting powers of the individual, culminate in an explosion. These nerve storms are denominated migraine. They appear periodically, their frequency being determined by the vulnerability of the tissues, intensity of the ptomaines and contributory influences known as reflex causes.

The transmissibility of conditions favoring migraine is evidenced by its appearance in early childhood and its unabating continuance till after the middle third of life.

THE RESULTS OF TOXINS.

As a result of tissue metabolism, toxins are a constant element in the system common to all. These become an irritant only under conditions of improper elimination. Toxicity of the ptomaines is one of quantity rather than quality. Contributory causes arise from our indulgence of the palate, and the improper functional use of any part of the physical organism. The sufferer from migraine anticipates the onset and very often designates the particular indulgence or incident that precipitated the attack.

For a short time after the nerve storm has passed, the system is comparatively immune, for the same causes that operated to precipitate the attack are indulged with impunity until the system is again surfeited with the ptomaines.

The interval between paroxysms varies with each person, and the same person may increase the frequency of attacks by the improper exercise of one or many individual privileges. The person who is normally accustomed to a migrainous seizure once in four weeks may, by dissipation, mental strain, worry, or loss of sleep, have an attack more frequently.

THE RELATION TO EPILEPSY.

The etiology of migraine is quite as obvious, and the transmissibility of conditions favoring its development are more constant than the causes and conditions producing epilepsy, which we all recognize as closely related to migraine. It is not uncommon to see migraine and epilepsy transposed in the same individual, and often in members of the same family. The interchangeableness of these two disorders, indicated to us by the masters in medicine, does not obliterate certain individual characteristics in which they are wholly different. Possibly the attacking forces are the same in each; but meeting different conditions, there results in one a sensory and in the other a motor psychosis.

OPINIONS OF OTHER WRITERS.

Alexander Wallace[1] says: "Migraine is believed to be due to defective or insufficient excretion, partly of the liver, but mainly of the kidneys. The severity of the headache is directly proportionate to the acidity of the gastric fluids."

W. Heind[2] says: "Migraine is attributed to two principal causes, (1) poisoning of gastric origin; (2) cerebral fatigue."

"Migraine is regarded as a toxemic condition, the toxins (probably albumoses) being absorbed from the gastro-intestinal canal."—C. E. Herter.[3]

"The occurrence in migraine of almost constant vomiting, frequent attacks of diarrhea, and polyuria or increase in other secretions is proof that many cases of this affection depend upon intoxication."—W. Stekel.[4]

These conclusions from physicians in widely separated parts of the globe show a growing tendency toward recognizing the germ theory of disease.

Intelligent thought has isolated and classified many bacteria that originate external to the body, which, when introduced, develop specific diseases. Less has been said, however, about those originating within the human economy becoming disease producers when allowed to accumlate beyond certain proportions.

THE COMMON TREATMENT.

In the treatment of migraine, almost as many drugs have been used as equal the number of physicians who have treated the disorder. The principal drugs used are in the main motor depressants or cardiac stimulants. These have been used separately and in combination, often without any very definite therapeutic purpose, hoping only for relief from immediate conditions.

When all else fails morphin will quiet the irritated sensory nerves. Attacks are sometimes aborted, or their intensity lessened, by vigorous acceleration of the blood current during the prodromes. The good thus accomplished doubtless comes from the more frequent contact of venous blood with radiating tissues.

TREATMENT FAVORED BY THE AUTHOR.

Seeing good results from such treatment led me to believe that diuretics, diaphoretics and hydragogues would materially assist in the eliminative process. We have many well-known drugs that act promptly through these several avenues, but in each case their efficiency is greatly enhanced by water as a diluent.

From the inception to the conclusion of a migrainous attack, digestion is practically suspended. This condition certainly demands the withholding of nutrients with immediate dilution and elimination of the gastric and intestinal contents. Emesis and lavage of the stomach are efficient, but often objectionable to the patient and inconvenient to the physician. Consent is much more readily obtained for emptying the lower bowel with a soapsuds enema, followed immediately by high irrigation with large quantities of hot normal salt solution.

This, with small but oft-repeated draughts of hot water by the mouth, continued from six to twelve hours, has given better results in my treatment of migraine than any purely drug medication.

Between the attacks, daily and copious drinking of water will do more to lessen the severity, if not prevent recurring paroxysms, than any or all drugs with only a minimum amount of water ingested.

It would be quite irrational were we to neglect correcting any existing ocular, aural, nasal, gynecologic or

1. The Lancet, Jan. 14, 1893.

2. Provincial Medical Journal, Oct. 2, 1894.
3. Journal of Nervous and Mental Diseases, January, 1897.
4. Wiener Med. Woch., Nov. 13, 1897.

rectal defect. We must also teach them how to eat and warn them against abuse of their already defective nervous system.

A SUBSEQUENT REPORT ON A CASE OF CARCINOMA, DISCHARGED AS HOPELESS AND REPORTED AS A FAILURE.

WILLIAM ALLEN PUSEY, A.M., M.D.
CHICAGO.

In a report of cases treated with Roentgen rays, published in THE JOURNAL, April 12, 1902, I recorded a case as follows:

CASE 24.—Man, aged 70, referred to me by Dr. William H. Wilder, with extensive carcinoma involving all the structures in and around the orbit of the right eye. The growth had progressed within the cranium when the treatment was begun. The treatment in this case continued two months, with decided amelioration in his condition for awhile, both as regards the appearance of the growth and his pain, but later evidences of rapid intracranial growth appeared and the treatments were discontinued.

Looking back at this case, it is Dr. Wilder's opinion and mine that we should have taken out enough of the bone of the orbit to have laid bare the structure beneath, so that the *x*-rays could have been thrown directly on the intracranial growth. Dr. Wilder suggested to me that had this been done, there might have been a chance of controlling the disease, so marked was the effect on the diseased tissue which was directly exposed.

When this case came under observation the eye was destroyed, the orbit filled with carcinomatous tissue, the orbital bones involved and there was every reason to believe that the disease had extended within the cranium. The clinical diagnosis of carcinoma had been confirmed microscopically by Dr. Wilder. Treatment was undertaken with *x*-rays with the feeling that there was only the remotest fighting chance.

During the first month that the patient was under treatment the acute pain from which he had been suffering disappeared and the tumor shrunk considerably. During the second month of treatment, however, in spite of the fact that *x*-ray effects were carried to the point of producing an acute *x*-ray irritation, the tumor increased and excruciating localized headache appeared. From the character of the headache there seemed no doubt that the tumor was developing rapidly in the meninges and, as the disease was progressing even on the surface where the *x*-ray effect was greatest and was apparently being uninfluenced by the treatment, we concluded that the case was certainly beyond control and that further treatment was useless. November 23 he was accordingly discharged, having at that time an acute *x*-ray inflammation over the whole involved area. There seemed every reason to believe that he would die quickly. On April 30, however, five months after treatment was discontinued, I received the following letter from Dr. T. Sprague of Sheffield, Ill., to whose thoughtfulness I am indebted for the ability to make this report:

DEAR DOCTOR: I write you regarding the condition of Mr. ——, an old gentleman whom you treated for carcinoma of the right eye, discharged as incurable (if I am correctly informed by Mr. ——) about the last of November. He was a charity patient and I think was referred to you by Dr. Wilder. He called on me on his return from Chicago, had a recipe calling for tablets of a quarter of a grain of morphin, to be taken when in pain. I saw that he had about twenty tablets. I noticed the condition of his eye at that time and concluded from my examination that it was only a question of time, and short time at that, with him. I saw him yesterday and he presents an entirely different appearance. The mass that occupied the orbit has shrunken, allowing the lids to close. He is free from pain, eats and sleeps well, uses no anodyne. There are a few little nodules on the nose near the commissure of the eyelids. With that exception he looks quite well. He has certainly gained since coming home, and I feel assured it is the result of the *x*-ray treatment. I should like you to see him again, but, of course, his means being limited, he would have to go to the Eye and Ear Infirmary as before.

This case is instructive in at least two particulars. It illustrates very strongly, in the first place, the persistence of *x*-ray effects. Here is a case in which the effects produced by the *x*-rays persisted for months after discontinuance of treatment and were sufficient to cause the disappearance of a tumor and at least the symptomatic relief of a case, which upon the basis of all experience could end only in death within a short time. We have been made familiar by unhappy experience with the progressive and long-continued effect of *x*-rays in *x*-ray injuries; it is something of a recompense to find these same qualities serving us in the therapeutic use of the agent. The next fact is the evidence in this case of the deep-seated effect of *x*-rays. That this tumor involved not only the orbit and orbital bones, but the surrounding intracranial tissues as well there is almost no room to doubt. The result, therefore, gives unmistakable evidence of the deep-seated action of the rays. Such a case offers another lesson, and that is the agreeable surprise from the use of *x*-rays that may confront one in even the most desperate case of circumscribed carcinoma.

GENERAL NERVOUS MANIFESTATIONS IN RELATION TO THE JAWS AND TEETH.*

GEORGE V. I. BROWN, A.B., D.D.S., M.D., C.M.
MILWAUKEE.

In a paper read before the Section on Neurology and Medical Jurisprudence of this Association in 1898, and this, the Section of Stomatology in 1897, I outlined the theoretical propositions upon which were based methods of treatment adopted by myself in the care of nervous affections intimately related to disturbance caused by the habit of grinding and clenching the teeth, many general as well as local manifestations being attributed to this etiologic factor. The term "jaw-strain" was used in the same sense as "eye-strain."

Attention was called to the fact that wherever the natural teeth remain in the mouths of patients suffering from nervous disorders, it is noticeable that the occlusal surfaces show abrasion, due to constant grinding and rubbing, the effect of extreme pressure brought to bear during paroxysmal muscular effort, or long-continued, excessive pressure, a condition frequently resulting from hours of painful suffering. This has frequent mention by writers as a marked symptom among those who are victims to the various neuroses, but in no instance do I find where an author has thought fit to reverse the order of things and make the habit of the jaws, which is responsible for this condition, one of the etiologic factors in bringing about the disease, rather than a result, as it is generally held to be. This hyperkinetic condition of the muscles of mastication is undoubtedly due to irritation of the brain centers governing these muscles, whether as a symptom of other neural disturbance, or vice versa.

Since the papers referred to were written an almost continuous observation of such cases, and the practical application of these principles, have convinced me more and more that the importance of the subject is but little

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Stomatology, and approved for publication by the Executive Committee: Drs. G. V. I. Brown, M. H. Fletcher and R. R. Andrews.

conceived by those who treat neurotics—as all must who treat at all—or even victims to nervous functional diseases of lesser degree.

It is difficult to convey a due appreciation of or, indeed, even to satisfactorily account for general nervous manifestations, often due to dental irritation, slight though it may be locally. Yet it has occurred repeatedly in my experience with patients, who have been relieved by treatment applied solely to the etiologic factor, that, where for any reason the exciting cause was allowed to return to the original state, or the habit of irritation by grinding certain affected teeth, was permitted to be resumed, the symptoms of pain, hysteria, muscular spasm, neurasthenia, or whatever they may have been, have returned at once and again disappeared after local relief or correction has been given.

The rationale of the jaw-muscle habit in its pathologic significance is thus explained. Whether central irritation be excited by some other primary disease, and the peripheral irritation be a secondary result, or the local disturbance an excitor of the cortical centers, the effect as a factor in disease is manifested in several distinctly different forms, which are as follows:

1. Through the pterygoids, a lateral grinding motion of the jaw of man takes place, which, if pursued at night, is easily noticeable by the grating sound and usually attention is called to it. If, however, the masseter and temporal muscles are called into unusual activity the result is that the jaws are firmly and tightly pressed together, without sound, and therefore often unnoticed, the pressure varying in individuals from 200 to 270 pounds. With the jaws closed normally and occlusion perfect this force would be comparatively equally divided among the whole number of teeth. If, however, as usually happens in these cases, the jaws be shifted slightly to one side, a little forward or backward, then certain portions of the individual teeth are brought together and they alone must bear this force. Ordinarily the membrane surrounding the root is capable of withstanding a considerable amount of traumatic irritation. But by continued application of this pressure, especially when weakened through other general conditions, as of circulation or otherwise, the power of resistance becomes impaired, then one of two things must result—either a local disturbance made manifest by elongation of the tooth and soreness to pressure (acute pericementitis), a not generally serious affection, accompanied sometimes by localized pain, usually comparatively easily remedied, or, as I have believed, a direct communication of this irritation to the larger nerve trunks, to be by them carried to the other parts.

2. In deformities of the dental arch disarrangement of the teeth must change the angle at which the stress of antagonism is applied. If the crowns or cusps occlude irregularly, whether upon the lingual, buccal or labial aspects, the bell-shaped natural crowns of the teeth are crowded together and the pressure exerted by the muscles of mastication tends to crowd out of line the teeth so situated as to be most subject to this crowding effect; the roots being conical in form, are likewise, in some degree, forced away from the apical portion of the alveolar socket, and though in the apical space (so-called), allowance is made for a limited amount of movement in the line of the long axis of the root, there nevertheless results a measure of nerve stretching where branches of the fifth communicate through the apical foramina.

3. Exhaustion. Eye-strain continues only in the daytime, whereas the jaw muscles work day and night, such patients being most weary upon awakening in the morning, and the pain most marked at that hour.

4. It is only reasonable to suppose that with the force of the jaws pressed tightly and continuously upon certain teeth, the moment such pressure is removed, the immediate result would be a hyperemia of the pericemental and other vessels about the roots; frequent repetitions of this would bring about a chronic inflammation, evinced sometimes by pyorrhea alveolaris or more properly, perhaps, interstitial gingivitis, and in others a low degree of inflammation that, through peripheral excitation, gives rise to many reflex symptoms.

5. When it is remembered that the lower jaw at birth is much larger than the upper, and also that the bones of the face are much smaller proportionately, at this period, than the bones of the head, it will readily be conceded that this constant pushing upward of the wedge-shaped inferior maxillary between the bones of the superior maxillary, increasing its diameter posteriorly as well as laterally, must exercise a radical influence, not only upon these, but also upon all the bones that are associated to form the nasal meati, and the nasal septum which divides them. Thus the nasal, maxillary, lachrymal, ethmoid, inferior turbinated palate and sphenoid bones, which form the nasal meati, are affected in shape and relation by any force which would alter the position of their respective development; and in precisely a similar manner, the vertical plates of the ethmoid, vomer, the crests of the maxillæ and the palate bones, the rostrum of the sphenoid and the nasal spine of the frontal bone which combine to form the nasal septum, in all save the triangular notch of nasal cartilage, are changed by any misdirection of energy which may cause a deviation in this dividing wall from its normal position or form.

Both Talbot and Kiernan make clear the fact that periods of stress, as they denominate certain stages which markedly affect developmental and other physiologic processes, have much to do with health and the form as well as the character of the growth of both mind and body of the individual. There seems to be but little question as to the truth of these statements, and if so, then why can not stress arising at any other period from a most common cause likewise affect nerve function and metabolic changes?

Kiernan says with reference to stress to the time of the eruption of the first molar: "In no small degree the struggle for existence during this period of stress centers around the development and eruption of the sixth-year molar. With the eruption of this molar, premature puberty, sexual precocity, epilepsy, gout, insanity, rheumatism, obesity and other nutritive degeneracies may occur. All have been charged to the eruption of the sixth-year molar, whereas its irregular or difficult eruption is, like them, an expression of constitutional stress. Hygiene at this period means also constitutional mental and moral hygiene. Epilepsy, for example, is not a disease but a symptom of weakness of certain vasomotor inhibitions. The first convulsion does not constitute epilepsy. Through a law of the nervous system, nerve action, once aroused, tends to repeat itself. In this way are established normal and abnormal habits, of which last epilepsy is one. In its early stages a habit normal or abnormal is easily checked. The first convulsion, therefore, could be prevented were its premonitions known. A recurrence could also be prevented were the constitutional origin recognized. Observation of the general constitution at this time, because of the irregular eruption of the sixth-

year molar, would enable the physician to nip in the bud epilepsy and many other allied conditions. Reflex notions, however, must be flung overboard. All irritation should be removed and any constitutional irregularity treated."

If periods of stress so exactly correspond to the different stages of dental development, intra- and extra-uterine, and if, as has been shown, there are stages in the life of the individual which are marked by the onset of a predisposition to such perversions of nervous activity as are indicated by the investigations of Kiernan, corroborated by similar results reported by Talbot, then the influence of irritation of the neural mechanism of the teeth can neither be questioned nor ignored as a factor in neurology. It may be, and doubtless is, an error to suppose that the eruption of teeth at a specific period coincident with the beginning of epilepsy, or any other manifestation of psycho- or neuro-pathic condition, is the cause of such disturbance. The real difficulty attending dentition is itself brought about by the same cause as the disease, but since it is, as a rule, absolutely impossible for the therapeutist to attend prenatal conditions, the point of vital interest and of value to him is that the co-relation of the mouth, teeth and jaw physiologic and pathologic processes to nervous affections, in one form or another, is almost invariably the rule; that, at least in a large majority of cases, a measure of relief can be given, and every means of assistance certainly should be opened if the over-wrought, highly irritable and hypersensitive nerve centers are to be given opportunity to rest and regain their normal equilibrium.

Dr. Daniel R. Brower says: "The prophylaxis of epilepsy demands much more attention than it ordinarily receives. A convulsion in the infancy of a child of neurotic inheritance is often the first manifestation of an epileptic tendency and deserves serious attention. Children of this tendency should be relieved from severe nervous and mental strain. They should be kept from the use of alcoholics, opiates, coffee, tea and tobacco in early age and adolescence, and from sexual irregularities and excesses. Phimosis, errors in vision, diseases and deformities of the upper air passages, or any other abnormality may demand attention and correction."

Surely, if such minute prophylactic measures are necessary, the ever-present, active irritation of jaw clenching and grinding can not be overlooked, and if carefully attended to would undoubtedly assume an importance far beyond present appreciation.

Dr. Harold Moyer says: "To my mind the central point in the diagnosis of neurasthenia is the presence of the fatigue symptom. . . . Rest is the sheet anchor in the treatment of neurasthenia." Complete rest must comprehend, in the light of what I believe the future will reveal, a consideration of the special muscles now under consideration as well as of others more generally understood.

Without exhaustive reference to authorities or quotations from the literature of pathologic neurology, which might be continued ad infinitum, in proof of the fact that unusual activity of the jaw muscles is almost invariably a symptom associated with disease of this nature, it seems advisable to deal directly with the evidence of practical results in the treatment of cases.

CASE 1.—Miss C. Age 25. Unmarried, anemic, very nervous, tall and thin, affection of the throat under treatment for some time, without relief. Pain in occipital region most severe, but during the attack would spread to the frontal and other regions of the face. Nerve storms of this character were quite severe and of frequent occurrence.

Treatment.—Correction of occlusion by grinding, particularly of the tooth most affected by the habit, gave relief. Result: gained 33 pounds in flesh, and almost entire freedom from pain.

CASE 2.—Mrs. M. Age about 50. Family of four children. History of many years' headache with short intervals of freedom from pain; attacks showed tendency to increase in severity and frequency at the time my treatment began.

Treatment.—Support was given by the aid of an upper plate, constructed in such a manner as to relieve the anterior teeth from the strain of occlusion. Result: almost complete freedom from pain for several months past, notwithstanding severe trials by illness of one, and surgical operation upon another of her family.

CASE 3.—Mrs. T. Mother of a family of grown children, and a grandmother. Quite thin, anemic and very nervous.

Treatment.—Corrected occlusion, and fastened teeth quite loose from pyorrhea. Result: increase of 10 pounds of flesh, and general improvement in health.

CASE 4.—Miss M. Age 25. Tall, well-formed, but history of headache almost constantly for many years; sometimes very slight, but very severe on the least unusual effort or excitement; digestive disturbances quite marked, many kinds of food could not be tolerated; susceptibility of the stomach to irritation very great; during the more serious periods of pain, drugs were frequently used to give relief. Both upper and lower arches were quite regular, except that the failure to erupt of a right superior bicuspid caused slight disarrangement of occlusion.

Treatment.—Habit of clenching the jaws in subconscious moments and during sleep, made it necessary to insert a soft rubber pad to protect and relieve the irritating influence of direct tooth antagonism, in occlusion. This was and is worn constantly at night. Steady pain has entirely disappeared. Recurrent attacks seem to have nearly ceased. Stomach has lost its irritability, and at this time (after many months) the patient seems quite well, general health and spirits uncommonly good.

CASE 5.—Miss —. Age —. Extreme nervousness, manifested in a variety of ways, anemic, lower arch crowded, grinding habit marked and reported by her sister to have been unpleasantly noticeable during sleep.

Treatment.—Appliance was adjusted to expand the arch, thus to give more room for the teeth, and in this way remove the stress by relief of pressure from crowding, also to make occlusal irritation impossible. Result was a complete disappearance of the unpleasant symptoms, full restoration to health and very considerable increase in flesh. After several months the appliance was removed with the purpose in view of being ultimately able to dispense with its assistance. In a very short time there was a return to the former condition, which is again being relieved by the use of the appliance.

CASE 6.—Miss F. Age 33. Came in charge of an attendant, almost, or quite, unfit, because of mental disturbance, notwithstanding the fact that a history of the case showed a number of months' treatment in a sanatorium without relief. There were the following conditions: Family history fair; a suspicion of specific history on her father's side, he having died of hemorrhage 30 years before. Her mother died of uremia, and was a morphin subject. Previous history: She was an only child; had scarlet fever at the age of five years, and her ears commenced to discharge two years later and continued discharging until two years ago. She had la grippe one year previous to my seeing her. She had been a mouth breather since she could remember, and when first seen was just convalescing from a severe attack of nervous prostration. She sought relief from deafness and to regain health sufficient for the continuance of her occupation of dressmaker.

Treatment.—A saddle-shaped upper arch was evident; occlusion with lower was made as nearly perfect as possible. Nose and ear treatment was thus facilitated, with extremely gratifying result. She was able to dismiss the attendant after about ten days' treatment. Six months later reported herself quite well; increase in weight fifteen pounds, and able to work

steadily without return of symptoms. This patient has since married, and seems to be entirely cured.

CASE 7.—Mr. H. Age about 55. Family history not very clear. A brother's child was mentally defective. Married and had several children, all, as far as could be learned, in good health. Patient powerfully built, and aside from the peculiar affection from which he suffered, was in good condition; a moderate drinker of beer, no intemperance as far as could be learned.

The pain had begun in the left side of the face, five years before he came to me, in July, 1900. The symptoms are best described by reference to illustration No. 1, which shows the distortion of the facial and eye muscles upon the affected side, which took place during paroxysms of pain. This came and went at intervals of about one and a half to three minutes. At the time of my first treatment and for a few months before that date, the symptoms had extended to the throat, the hyperesthesia making it almost impossible to swallow even liquid involving the pharyngeal muscles and thus exciting excruciating pain. Upon examination it was found that all of the teeth of the upper jaw from the left superior central incisor back, had been extracted in the hope of giving relief. The remaining tooth was elongated so that it extended below its next neighbor, the right superior central incisor, about one millimeter, and this notwithstanding the fact that the incisal portion showed the effect of abrasion very much, having been worn

Figure 1.

away by the grinding of the teeth of the lower jaw, which also accounted for the elongation, due to thickening of the pericementum about the apex of the root. In order to give temporary relief, operation was performed with the surgical engine, by opening into the superior maxillary bone and severing the anterior branch of the trifacial. The pulp was removed from the left superior central incisor, and it was ground down so that it could no longer meet the teeth of the lower jaw in occlusion. All of the symptoms have disappeared, and the patient's appearance is as shown in No. 2. Twice since the time of treatment he has returned with slight premonitory attacks of pain in the same region. Each time it was found that the affected incisor had worked its way down until it was again striking the lower teeth. Each time it was ground slightly, the relief being immediate and complete.

CASE 8.—Miss F. Age 35. Referred by Dr. W. F. Malone, August, 1900. Family history unknown. Height about 5 feet, 6 inches, thin, anemic. History: Burning sensation and hyperesthesia of left side of tongue, which had begun about 12 months previously and had steadily increased. Six months later the same sensations were experienced in the throat, extending entirely across and becoming so marked in severity as to threaten complete nervous prostration. Upon examination, an ill-fitting piece of bridge-work, extending from the left superior cuspid to the first molar upon the same side, showed in a very noticeable degree the marks of the grinding habit due to evident malocclusion.

Treatment.—Removal of the existing cause, and correction of occlusion gave relief. The patient reported in June, 1902, entirely free from the old symptoms, in good general health. Her weight, which was one hundred pounds at the time of the beginning of treatment, increased to one hundred and twenty pounds, with complete disappearance of all nervous manifestations.

CASE 9.—Mr. ———. About 25 years. Paralysis of the right side of the face had come on gradually, having first been noticed about seven or eight days before coming under my care. Careful examination by a neurologist failed to show a reasonable cause for such a condition. Patient's health seemed to be good; reflexes were found to be normal; and as he was not at all alarmed about his condition there seemed to be no psychic

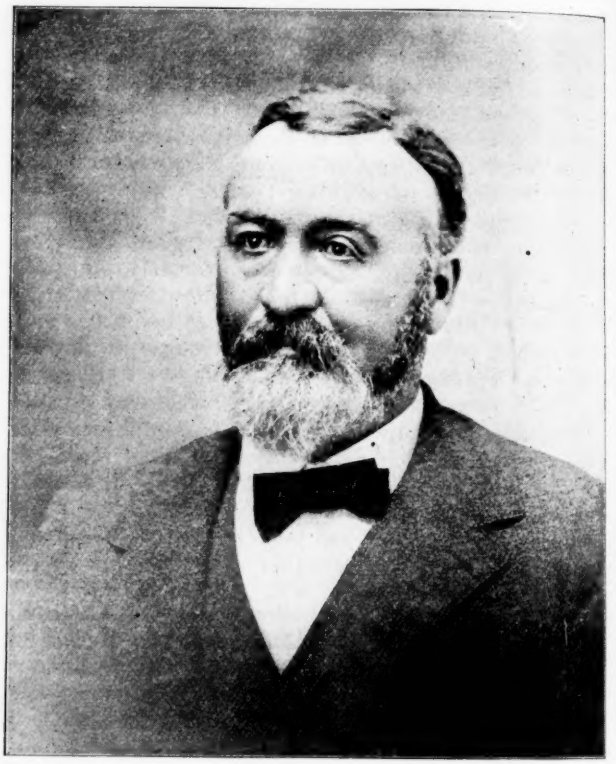


Figure 2.

element which could be held accountable. Examination of the eyes by an oculist failed to disclose any exciting cause in that direction. Upon examination it was found that, through malformation of the jaws, only the molars met in occlusion, it being impossible for the patient to bring the anterior teeth into contact at all. In the hope that some relief might be given, the molars were ground down sufficiently to equalize the stress of occlusion. No other treatment was given. The symptoms began at once to disappear, the muscles regaining their normal usefulness in the same manner in which it was lost to them.

How far it is either safe or wise to claim dental or maxillary irritation as exciting causes in such cases as the last one described, I do not know. One other case of paralysis of the facial muscles, that had continued for a much longer time, the patient being a young married woman, without children and without, so far as could be learned, specific disease, in whom the grinding habit was very marked, was given a very considerable measure of relief immediately, by extraction of a lower molar, which it was deemed wiser to extract than to attempt to treat under such grave conditions. Full restoration to usefulness of the muscles upon the affected side returned shortly after the alveolar socket had healed. In another, a young lady about 22, there

seemed to be a similar particularly intimate association with a paralysis of the entire right side, including the extremities, which lasted for several months and was most puzzling to the physicians in charge, because no brain lesion could be diagnosed, although for a long time it was believed that the etiologic factor was of that nature. Her recovery, however, would seem to have disproved such a theory.

Many such cases as the ones described could be cited that have come under my care during the last five or six years, and though results were not always as markedly successful as might have been desired, nearly all the patients have been materially benefited, and other, more general treatment, assisted, while a very considerable number have been cured without other therapeutic measures. I am fully aware of the psychic element that is omnipresent in dealing with neurotics, and am also sufficiently impressed with the idea that one is apt to find too much in his own special field. Therefore, it is my wish to emphasize, in conclusion, the following summary: The jaw habit may in some instances be an etiologic factor in functional nervous disarrangements or more often, perhaps, only a symptom. But in the therapeusis of such diseases, every method of treatment might reasonably be made more effective if its correction received due consideration. No dogmatic rules can be laid down by which ill effects of this muscle habit may be overcome. Careful study of individual characteristics requires the adoption in different instances of a great variety of methods, simple in themselves, yet requiring the greatest care and delicacy in order to be effective. One of the simplest and most beneficial appliances, one quite harmless and yet capable of very general and useful application, is a hard rubber plate, with soft velum rubber border extending over the occlusal surfaces of the teeth. The palatal portion gives a sense of firmness and security, and the soft rubber covering to the crowns of the teeth makes grinding or serious injury by undue irritation impossible. It need only be worn at night, and thus gives very little serious inconvenience to the patient if carefully adjusted.

A consideration of the methods of treatment would require much more than the limits of this discussion allow; but everyone who undertakes the application of any corrective measures to the dental organs should remember that, in the highly sensitive state common to these patients, it is quite as easy to do harm through failure to perfect the occlusal mechanism, as it is to benefit by accuracy and manipulative dexterity.

DISCUSSION.

Dr. A. E. Baldwin, Chicago—I have no doubt that we all see cases in which not enough attention is given to obscure functional disturbances. Within the last two months I have had some cases in which I have given temporary relief and in which I hope for considerable permanent relief from following the suggestions of this paper.

Dr. J. L. Williams, Boston—We have all seen these cases of grinding of the teeth, but I do not know that I have ever heard the matter so carefully analyzed before, as to relations and causes. In one case I have seen, in which the teeth were quite worn by the grinding, the patient said he sometimes ground his teeth all night. I think Dr. Brown has treated the matter very scientifically.

Dr. Eugene S. Talbot, Chicago—Every dentist of some years' experience has had similar cases, but the question is to be able to diagnose them. Dentists have many of this class of patients, neurotics and degenerates. There is first the patient with the unbalanced nervous system and the resulting conditions mentioned by Dr. Brown develop. He mentioned the fact that the individual has periods of stress in development. It is to a certain extent true that our systems change every seven years; some of the tissues change oftener. There are periods in the life of the individual which mark every important epoch in our histories. The first period of stress is at 4½ months of fetal life, the second, the eruption of the first set of teeth. In the life of the child this is the most important period. There is greater difficulty in tiding the child over this period as also at this time the alimentary canal is changing. It is during these changes that the neurotic or degenerate child develops. The third stress is the eruption of the permanent set of teeth. It commences at the sixth year and remains until all the teeth have erupted. This period of evolution is also the stage of puberty. This, then, is another very marked period of the child's life; at this time the deformities of the dentine and irregularities of teeth take place. It is very important that in the eruption of permanent teeth and in the correction of irregularities something should be known of the nervous system, since every individual who has deformities of the teeth and jaws is a neurotic. The fact that they have irregularities of the teeth indicates this. The fourth period of stress begins at about the 20th year and lasts three or four; the last is at the 45th year when the senile change develops. Many of the conditions spoken of by Dr. Brown commence to develop at this time. It is at this time that neurasthenia sets in and these nervous and degenerate people are affected to a greater extent than normal individuals. The schools for idiots and the insane hospitals show that in nearly every case neurotics and degenerates are suffering from decay of the teeth.

Dr. M. L. Rhein, New York City—I do not know of any subject presented to the Section which in its practical application is more valuable to the practitioner than that which Dr. Brown has treated so ably. What pleases me most is the direct attitude of the essayist to revert at once to the cause of the disturbance in finding his remedy. I have had, as every one of experience, some such cases. There is nothing so satisfactory in results as far as treatment is concerned, as the immediate cure following in such cases, when the cause has been removed. The knowledge as to the proper occlusion of the teeth is generally the keynote to the correct treatment. I have always given much attention to determine the amount of force on different teeth in such cases. This involves a consideration of all the motions of the teeth. I have made it a rule to replace every missing tooth in order to equably distribute the occlusive force, and I have a series of cases showing satisfactory results obtained from such treatment. Personally, I have had little success with the soft plates worn at night. I have observed in the operative work of filling teeth that there is a too general habit of leaving the occlusal portions of the posterior teeth almost devoid of their cusps. This renders the proper performance of the function of mastication impossible.

Dr. G. F. Eames, Boston—It seems almost absurd to remind an intelligent dental practitioner that this subject is an important one. I was much interested in it when I heard a paper on the same subject by Dr. Brown at the meeting in Philadelphia and was then impressed with the great benefit which must result to the profession at large by having attention called to it. I am in hearty accord with the paper, and have no criticism to make. The lesson to be drawn is, that it is a good thing to correct these troubles, but a far better thing to be on the watch as guardians of the public health, and not to wait until a patient complains before beginning the treatment which should have been prophylactic.

The cause of the trouble may not only be in the mouth, but in some remote part of the body, both agents working together. Our duty lies in watchfulness for the slightest symptom and in the correction of the occlusion, thus preventing such disastrous consequences.

Dr. Brown, in closing—I wish to thank the gentlemen for their very kind expressions concerning the subject-matter of my paper and to express my appreciation of the fact that Eames remembered my paper so many years. It has interested me very much to know that testing of the force of the jaws as described by Dr. Rhein is being done by any one. I

doubt its practical value in dealing with the cases, because patients in their conscious moments find it impossible to place the jaws in the position through which the irritation comes. Further, I do not think a patient asked to do so could exert force enough to give the amount of stress on the teeth that would be given in a moment of nervous excitement or when the nerve centers were excited by some dream.

Prophylaxis is, of course, what this all leads to. All we can hope to do with a paper of this kind is to call attention to the necessity of finding the causative factor in the nervous disturbance. The most interesting part of my work is in being able to lead these children whose jaws are imperfect in a direction which I hope will prevent much future trouble for the individuals. When parents have seen the ill-effect of neglect and their attention is called to proper treatment they are usually quite willing to bring their children.

Autointoxication is a predisposing factor and often an exciting cause in these conditions. I have an interesting case under treatment at the present time and have seen others illustrative of this cause. The case is that of a young lady whose headaches have almost entirely disappeared, except when she meets a young man whose influence is such that usually pain follows the excitement incident to an evening in his company. Though she may seem to be in perfect health, invariably in a short time symptoms of autointoxication are noticeable following the attack and precisely in a similar way do headaches in other cases follow in the train of digestive and other disturbances which bring about autointoxication and through it the painful condition which usually ensues.

Clinical Report.

AN EPIDEMIC OF THE "FOURTH DISEASE."

P. C. CURTIS, M.D.
ROUND LAKE, N. Y.

Round Lake, lying about midway between Troy and Saratoga, has a winter population of about four hundred, and of these about half had the disease which I am about to describe.

Before this epidemic I had never heard of the so-called "Fourth Disease," but there was something in this so entirely different from anything I had previously seen, that very early I came to the conclusion that it was something new and I now believe that it was the so-called "Fourth Disease" described first by Dr. Dukes in 1900, and by Dr. Simpson in the *Archives of Pediatrics* for September, 1901.

March 11, 1901, I was called to the family of Mr. M. L., as their three children were all taken slightly ill at about the same time, with temperatures of about 99, pulse 86 to 100. The throat showed what looked like a follicular tonsillitis. The glands of the neck were enlarged and tender. Two patients had a bright red eruption on their bodies, extending from the neck uniformly over the chest, trunk, arms and legs. The tongue had somewhat the appearance of scarlet fever. There were no other cases in the vicinity and the children had not been from home for at least three weeks.

My diagnosis was scarlet fever, and I reported them to the health officer of the town of Ballston, Dr. F. J. Sherman. As the children's father furnished milk for Round Lake, I told him he must not go near the house and must wash his cans elsewhere. He assured me later that he complied with my orders and I have no reason to doubt it. The eruption lasted about three days and then disappeared. About a week after, I was called again and found the glands of the neck were greatly enlarged, but there was no rise in temperature. I gave them the usual treatment and the glandular trouble soon disappeared. The children had previously had scarlet fever.

This was the commencement of the epidemic which followed at Round Lake. March 29, nineteen days after, I was called to Mrs. M.'s, a neighbor of the family just referred to. I found a young man, aged 20, with a well-marked case of German measles, the eruption beginning on his face and extending all over his body. At the same time, his sister, aged 12, had a fine red rash beginning on the neck. Temperature was about a degree above normal, but the patient said she did not feel ill.

I reported these cases to Dr. Sherman and asked him to see them. He agreed with me that one of the cases was German measles and the other was scarlatina. But it seemed strange that the fever was not higher and the pulse more rapid, as the eruption was very general over the whole body—deep-red in color. With such an eruption one would expect a temperature of 103 or 104. The following day I had a case at Round Lake and the next day six more. They all commenced with a sore throat and glandular trouble, the rash extending from the face downward and with very slight febrile disturbance.

A doubt of the correctness of my former diagnosis entered my mind, and I called Dr. F. C. Curtis of Albany, who saw with me ten or twelve cases. He said they were very puzzling as they had a rash very like scarlet fever, perhaps not quite as deep a red, minus the fever. Also that there were patches of healthy skin in places, whereas if it had been scarlet fever the redness would have been uniform. He considered that it was German measles with a scarlet fever form of eruption.

In nearly all the cases there was a pronounced exudate on both tonsils, which gave rise to the fear that some of them might develop diphtheria. To be certain, we sent several cultures to the Bender Laboratory and no diphtheria bacilli were found. One particular case I wish to describe. I was called, April 1, to see W. B., aged 21, who had a well-marked case of German measles. He soon recovered, and ten days after developed the same disease that was epidemic at Round Lake.

In all, there were 147 cases. Their ages were as follows: From 1 to 5 years, 9 cases; 5 to 10 years, 26 cases; 10 to 20 years, 31; 20 to 30, 18; 30 to 40, 18; 40 to 50, 19; 50 to 60, 8; 60 to 70, 11; 70 to 80, 4; 80 to 90, 3.

During the epidemic, Drs. Sherman, Curtis, Shaw, Finder and Booth saw some of the cases and were unanimous that it was the most remarkable epidemic they had ever seen. The period of incubation was from seven to nineteen days. The desquamation was mostly branny scales, although on about 10 per cent. of the cases it was lamellar, being able to take the cast of the finger as you would draw off a glove.

As to the cause—did it arise from the milk? Taking into consideration the fact that the disease originated in the family of the man who furnished all the people of Round Lake with milk (with the exception of five or six families—none of whom contracted the disease), is it not fair to presume that it was thus transmitted? To me it is the only logical solution.

The following complications occurred: Rheumatoid symptoms, 29 cases; bronchitis, 4; pneumonia, 2; erysipelas, 3; erythema nodosum, 3; acute otorrhea, 12; quinsy, 3; pleurisy, cystitis and myocarditis, each 1; and 18 previously had scarlet fever.

My opinion is that the epidemic was the so-called "Fourth Disease," for the following reasons: First, an indescribable difference; second, not one case of nephritis followed the disease; third, the age (75 being over 30 years of age); fourth, the fact that 18 of them previously had scarlet fever; fifth, the incubation period, 7 to 19 days: sixth, many had had rubella.

Le Seure's Dry Refrigeration Apparatus.—Major E. C. Carter of the Army, while in charge of the Leiter Hospital at Chickamauga, thus describes the apparatus which in his experience proved most satisfactory: "When refrigeration was indicated and bathing was impracticable use was made of an apparatus first demonstrated to me by Major Oscar Le Seure of Detroit. A rectangle of bolsters—muslin stuffed with cotton batting—about six inches in diameter was placed about the patient, one bolster passing over the neck and projecting some distance beyond the shoulders. To each end of this bolster another was attached which lay parallel with the body from shoulder to feet. The lower ends of these long bolsters were joined by a short bolster parallel with the one passing over the patient's neck. Patient and bolsters were covered with a rubber blanket, which was pressed down between the patient and the long side bolsters, so as to leave a waterproof trough on each side of the patient. Then cracked ice was laid on the rubber blanket over the legs, thigh, abdomen, thorax, and arms of the patient. a thermometer placed in his mouth and an ice-cap on his head. It is a process of dry refrigeration, easy and simple of application and effective."

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

61 Market Street :: :: Chicago, Ill.

Cable Address: "Medic, Chicago"

Subscription price: Five dollars per annum in advance

SATURDAY, AUGUST 30, 1902.

"FIRST AID" DANGERS.

A number of the important railroad systems of the country have recently taken up the question of arranging for the instruction of their employes in first aid to the injured. Some of them, indeed, have already made some progress in the work. This is a very commendable demonstration of the earnest desire of railroad officials to secure for the injured well-directed help and consequent relief from suffering and danger as soon after an accident as possible. First-aid instruction is deservedly gaining in popularity among all classes of people and will undoubtedly prove a valuable humanitarian help for the injured in many situations in life. Like all good things, however, the practice of first aid is liable to abuse, and this liability must be borne in mind if certain unfortunate consequences of well-intentioned but misdirected efforts are to be avoided. Some of these sad results have already been noted, and we are likely to hear of many more in the near future, if the important practical maxim is not insisted on, that first aid is only for emergencies, and that as soon as possible after an accident the services of a trained medical attendant should be obtained.

It must not be forgotten that, as a rule, more depends on the first dressing of a wound than on any subsequent treatment. More harm can be done, for instance, by ill-advised manipulations of a fracture, by the improper application of a splint, or by surgically unclean contact with an open wound than any subsequent skill can undo. Unless, then, there is absolute necessity for immediate intervention it is better for the patient, as a rule, to wait for the attendance of a skilled physician rather than incur additional risks without any prospective advantage.

There appeared at the beginning of the present year a series of letters in the *London Lancet*[1] that illustrated very strikingly some of the dangers of misapplied first aid. Dr. Walter G. Spencer, surgeon to the Westminster Hospital, gave the details of cases that had come under his observation, in which, despite the fact that the first aid was rendered to the injured by persons instructed in regular classes established for the purpose in London, yet much more harm than good resulted from the inexpert intervention. Even fatal results occurred in some of these cases and seemed directly attributable to lack of skill and judgment in the original handling.

In cases involving hemorrhage more than in any other class of injuries the practice of trained first aid would seem to promise good results. It is precisely in this class of cases, however, that some of the most serious blunders are apt to be made. Bleeding, to those trained in first-aid classes, always seems an indication for the application of a tight bandage or of some sort of tourniquet to the limb above the bleeding point. If an artery be wounded this is an excellent proceeding. If a superficial vein be the source of the hemorrhage, then the patient could not be subjected to a worse method of treatment. For the severe bleeding not infrequently seen after the rupture of a dilated varicose vein the application of pressure above the bleeding point will almost surely lead to the exsanguination of the patient. The superficial veins have very free anastomoses with the deep veins. No ordinary pressure, and especially not such as is likely to be applied to a limb by a novice in surgery, will occlude all the circulation to the part. The deep arteries continue to carry blood beyond the bleeding point and this constantly finds its way out through the gaping rupture in the dilated varix. For the proper treatment of such cases a knowledge of anatomy is required, as a rule, that can not be expected in any but a physician, and a practical judgment that can only come in the actual handling of such cases.

Hemorrhage from the varicosities, however, is not the only source of bad results in these cases. Dr. Spencer gives the details of two cases of superficial lacerated wounds near the elbow. They involved the veins, but no important arterial branch. A bandage was applied tightly above the wound, and, needless to say, severe bleeding continued. When the patients reached the hospital they were very anemic. In one of the cases so much blood had been lost that the anemia was still marked four weeks after the accident. In one case a fatal termination followed the application of a tourniquet, put on in order to prevent bleeding in the popliteal region. The patient was a strong, healthy young man who suffered a compound fracture of the lower third of the femur, followed by very severe bleeding. A knotted handkerchief was applied to the thigh above the wound and twisted according to the well-known direction in this matter. The patient was removed to the hospital as soon as possible. The bleeding continued in spite of the bandage. It stopped on the application of pressure over the wound itself, at the hospital, but the patient had lost so much blood that in spite of saline infusions he died an hour after his entrance. At the autopsy it was found that only terminal branches of the profunda femoris artery and vein were torn. The popliteal vessels were uninjured. The pressure of the improvised tourniquet failed entirely to cause the collapse of the deeply-seated artery and actually encouraged the bleeding from the vein.

These are, of course, exceptional cases, but they emphasize the necessity for insisting on professional supervision at the earliest possible moment of whatever may be done by those who render first aid. They serve to show, too, that circumstances may arise in which the

1. Lancet, Jan. 4 and 25, 1902.

little knowledge of the voluntary assistant may become, indeed, a dangerous thing. While, then, we hail with welcome the establishment of first-aid training classes, we can not refrain from pointing out that the most important lesson given and insisted on must be the putting off the presumption of knowledge that so readily comes to beginners in medical wisdom. Otherwise more harm than good may result from their well-intentioned efforts.

FURTHER STATISTICAL STUDIES IN THE SPREAD OF MALIGNANT TUMORS.

In an extensive article Karl Kolb[1] gives the results of his studies on the frequency and geographical distribution of cancer in southern Germany, and the inferences that he feels permitted to draw therefrom in regard to the etiology of cancer. Without entering into the numerous details of the work, attention may be called to some of the more striking points. It would seem that statistics based on an accurately controlled material no doubt would be of considerable value in the study of the etiology of cancer. This presupposes, however, an obligatory certification of deaths by physicians, not only in the cities, but also in the country. Kolb believes from his work that during the last decennial periods cancerous diseases in southern Germany have increased, not only apparently, but also actually, and that the actual increase is explainable only in small measure by the increased longevity. His figures show that cancer is more frequent in the larger cities than in the smaller, and that on the whole it is not unlikely that cancer is more frequent in cities than in the country. Instances of a reversal of this relation are not rare, however. As regards the influences of the soil on the frequency of cancer, it seems that the physical and chemical conditions are of importance rather than the geological structure, and that swamp and low-lying, moist regions distinctly favor the development of cancer. Local differences in the frequency of cancer, local endemics, and the occurrence of several cases of cancer in the same house ("cancer houses") seem easily explainable by assuming a parasitic etiology. Hence in cancer as in endemic and epidemic diseases in general the influences of soil in the last instance are referable to microörganisms. The variations in frequency from time to time also favor the parasitic theory in the opinion of Kolb and others. His material shows that Italians are less frequently affected by cancer than Germans; furthermore, that cancer is not so frequent in prisons as among the free. In this point his observations correspond with those of Williams of England, who on them builds the theory that cancer is due to excessive nutrition. Kolb found no interrelation between cancer and tuberculosis.

As a practical suggestion springing from this work, Kolb advises that persons coming from cancerous families or already operated on for cancer should consider the advisability of avoiding regions that are known to be especially affected with cancer. Furthermore, he suggests that cancerous patients and their belongings should be regarded as infectious, and that beds, utensils of different sorts, and clothes of cancerous patients should be disinfected before being used by others. Kolb cites new instances indicating the contagiousness of cancer, and it may be that hereafter we shall come to consider contagion as explaining better the occurrence of cancer in several members of the same family than the present theory of hereditary influence.

It is evident that Kolb throughout his work has been influenced by his belief in the parasitic theory, but it does not seem that he has permitted this prejudice to carry him outside of reasonable bounds. If studies of this sort are to be of real value they should be carried on from year to year and in various regions in as nearly the same manner as possible. This could be accomplished best by the organization of committees for collective investigation. In that way the work could be organized and carried out according to uniform plans and thus give comparable results. We would recommend the advisability of seriously considering the undertaking of such work to either the Section on Surgery or the Section on Pathology and Bacteriology of the American Medical Association. The small, well-organized local medical societies in smaller towns and country districts undoubtedly could do a work of real service to medicine by careful, thorough, persistent study of the frequency and distribution of cancer in the corresponding territory where the conditions are relatively simple and easily controlled.

1. Zeitschr. f. Hyg. u. Infektionskr., 1902, xl, 373-467.

THE INCREASE OF SUICIDE.

In the *Spectator*, an insurance journal, for August 14, Mr. Frederick L. Hoffman, statistician of the Prudential Insurance Company of America, gives an analysis of the suicide record for the year 1901. His figures are taken from fifty cities, and show an average slight increase over the ratio for the preceding decade of nearly 1 per cent., from 15.7 to 16.6 per 100,000 population. He estimates, moreover, from the 1900 census figures of the suicide rate in the registration area of 11.8 per 100,000, that, taking the whole population of the United States as 79,000,000, and including both urban and rural districts, we have an approximate annual mortality by suicide of 10,000 in the country as a whole. Comparing the figures in the fifty municipalities by single years since 1890, it is shown that the increase has been a rather steady and gradual one, only varying by a slightly higher figure in the years 1897 and 1898. Comparing the two five-year periods 1890-5 and 1896-1900 we find an increase of over 2 per cent. in the latter per 100,000 population. Hence, as Mr. Hoffman says, "the implied conclusion is that a further increase in the rate of suicidal tendency in the cities of this country may be expected during the next decade, and the suicide question, like arson in fire insurance, is thus becoming more and more one of utmost importance to life insurance companies."

He also gives another table showing the experience of the Mutual Insurance Company for the 55 years from 1843 to 1898, dividing it into two periods, 1843-1885, and 1886-1898, including males only, as the female suicide statistics are too insignificant to be tabulated. This shows a percentage of suicides in the total mortality of 2.4 in the later as compared with 1.9 in the earlier period. The age of suicides seems also to have lessened, as the suicides under 45 increased from 2.1 per cent. to 3.9 per cent. in the later period and there was an actual decrease of those in advanced life. From such data as were given the tendency to increase seemed much less in females than in males, and this we believe is the general rule.

These figures certainly are not encouraging, but they are probably not more than are to be expected with the modern tendencies to urban concentration of population and the increasing stress of the life struggle in this country. The data are silent as to the birth places of the suicides, but unquestionably a certain proportion are among the immigrants who have the element of nostalgia added to the hardships and disadvantages and often the disappointments of beginning life in strange and foreign surroundings. Many of them are from countries where the suicide rate is higher than here; we have no cities in the list given by Hoffman that show as high a percentage as the statistics of some of the Italian, French and German cities given in Morselli's book, published some twenty years ago, and the same tendencies exist there as here, and probably the same increase has been observed. In reviewing the same subject of the apparent increase of suicide five years ago,[1] it was editorially said that "it does seem, judging from events that are occurring daily, that there has been and still is an abnormal, hysteric tendency existing at the present time in the population, and to this we may perhaps attribute a part of the unusual increase of suicides." This is as true now as it was then; whatever such condition exists would be aggravated by some of the modern tendencies of civilization alluded to above. The element of unhealthy discontent now so much encouraged and the lack of the mental hygienic influence of religion among certain classes in our cities also favor the increase of suicide, and it may be are not sufficiently counteracted by modern methods. Insanity is also increasing in frequency and at a much faster rate than suicide, even admitting that our statistics of the latter are defective. In one way this is not encouraging, but if we consider suicide a crime and insanity only a misfortune it has its better side, an ever larger proportion of the suicides must be due to insanity.

It is not probable that the increase observed has reached its limit, and the subject is one that deserves the most careful attention of the physician as well as the sociologist. Suicide is, to a certain extent, a medical question, and we can not well ignore it when it seems to be such a growing evil as at present.

1. THE JOURNAL, Aug. 21, 1897.

ASSAULTS ON PHYSICIANS.

Among the recent incidents of the existing coal-miners' strike is the attack on a physician for attending a man who had been beaten by the strikers. Similar cases have occurred in other labor disturbances and they should not go unnoticed by the medical profession. We can charitably allow a good deal for ignorance, and undoubtedly the general sympathy with the working man and the general public prejudice against what is considered a grasping combination of the operators has led the public to condone or overlook a great deal of brutality and barbarism in the conduct of the strike. When, however, it goes so far as to prevent acts of ordinary humanity and to make those who offer them its victims; when a physician is abused, beaten and even put in risk of his life for doing his duty when called on, it is time for some pretty positive reprobation. If strike leaders can not control their followers they take on themselves a very serious responsibility, and a still greater one when their followers are such savages as this Pennsylvania atrocity shows some of them to be. There is no surer way to destroy any public sympathy or ultimately lose their cause than by such performances. Threats of boycotts of doctors for aiding nonunion men might be overlooked, but actual violence is something beyond these, and as a profession we should not let it go uncondemned.

SUBSTITUTION BEFORE MEDICAL EXAMINING BOARDS.

There is considerable said about substitution nowadays, but the druggists are not the only ones that thus impose on the medical profession. Medical examining boards are finding it a problem for their solution, and it is said that in one state at least rather extensive frauds have been committed by impersonation of candidates by others. It is in not one state alone, however, that this has been attempted, and it seems possible that it may have been successful in more cases than have been reported. In New York, Illinois, Indiana, and very probably in other states from which we have not heard, a photograph of the applicant for license must now accompany his application as a safeguard against such frauds. This ought to be sufficient, but judging from the persistence and frequent success of swindlers and counterfeiters, even more than this might be necessary to exclude them. There appears to be a class of men posted in medicine who are willing to thus prostitute their talents for gain, and the laws have not anticipated their existence. Thus in one state recently it was found that no statute applied and the personator escaped scot free. It would be well to start a rogue's gallery of such and send their photographs and Bertillon measurements to the various examining boards. It is a requirement in most registration laws that the applicant prove a good moral character, and it would appear that there must be either a laxity in the enforcement of this provision or a pretty loose system of endorsing and recommending applicants. It may come yet that not only a photograph, but a whole series of sworn identifications will be required, as is the rule in some foreign countries when admitting outsiders to practice. It is not pleasant to contemplate this necessity, and we would suggest as an additional deterrent to fraudulent substitution of this

kind the insertion into the statutes regulating medical practice of a penal clause providing a punishment to fit the crime.

CONCERNING INDEXES OF MEDICAL JOURNALS.

We receive with gratification occasional expressions of praise for the index of current medical literature contained in the closing issue of each volume of THE JOURNAL. While we are not disposed to self-praise, we may be pardoned for quoting—in the absence of Dr. Simmons while convalescing—one of these for its personal praise. The *St. Paul Medical Journal* says editorially:

Medical journals are valuable from two important points of view. They furnish the physician with current reading and they serve, when the volumes are completed and bound, as works of reference. For the latter purpose they are practically useless unless well indexed. A bound volume of a medical journal without a good index is as useless for purposes of reference as a library without a good catalogue. For a time the *Index Medicus* furnished a complete index of current medical literature, which was of immense value, but it ceased publication some time since for lack of financial support. The *Bibliographia Medica*, published in Paris, has taken up the work where the *Index Medicus* left off, and although of very great value, it is not receiving the general support which it needs and which it deserves, and its continuance is something of an uncertainty. THE JOURNAL of the American Medical Association has furnished in the concluding number of its recent volumes a most exhaustive and immensely valuable index. The last number of the 38th volume (June 28, 1902) contains the most complete index of its kind we have ever seen, which serves not only as an index to the journal itself, but as a complete index of both titles and authors of American and foreign medical literature. The production of such an index means an immense amount of labor and we feel sure that it will be greatly appreciated. It is but another instance of the tireless energy of Dr. Simmons, the Editor of THE JOURNAL, and of his determination that THE JOURNAL of the American Medical Association shall be second to no similar publication in the world.

A GOVERNMENT INVESTIGATION OF WATER SUPPLIES.

The U. S. Geological Survey has for some years past been investigating the water supplies of the country in their economic bearings, and at the beginning of the present season it has taken up their consideration in a hygienic point of view. The investigation aims to discover the changing conditions as affected by pollution of various kinds, drainage and sewage, manufacturing, etc. The turbidity, color, odor, amount of nitrogen, as free ammonia, albuminoid ammonia, nitrites and nitrates, the amount of chlorin, the total residue, the alkalinity, hardness, amount of carbon dioxid and the proportion of bacterial contents are to be noted. Under special conditions the amount of iron will be determined and special study of microörganisms be made. The cooperation of a large number of observers in different localities is being secured and directions issued to insure uniform observations. The methods used for chemical and bacteriologic examinations are those recommended by the American Public Health Association, and the color and turbidity standards are those which have been adopted by the Survey in co-operation with eminent hydrographic engineers. The utility of this work is obvious, and it ought to be carried out as thoroughly and extensively by the U. S. Geological Survey as by any other possible agency. A government investigation, moreover, will have a certain prestige that local authorities could not give, and the general results can not fail to be of the highest importance. It illustrates the manifold interrelations of things that the Geological Survey can thus better than other government bureaus take up and carry out what is, in its way, a hygienic survey of the water supplies of so extensive a country as ours. The work is in charge of Mr. M. O. Leighton, of the Survey, who is at present studying the rivers of the central western states.

THE HISTORY OF THE MICROBE OF EPIDEMIC DYSENTERY.

In a communication to the Academy of Medicine in Paris, Chantemesse[1] reviews some of the early work in connection with the bacillus of dysentery. In 1888 Cornil presented to the Academy for Chantemesse and Widal a communication entitled "The Microbe of Epidemic Dysentery." In this paper is described the characteristics of the bacillus, its presence in the stools and the mesenteric glands of a dysenteric patient, and its absence from the stools of individuals free from dysentery. These observations were made on the body of a dysenteric patient in Tonkin. In 1895 Celli published an extensive article on the bacillus of dysentery, in which he stated that the bacillus studied by him had the same characteristics as that described by Chantemesse and Widal; and in 1898 appeared the epochal work of the Japanese bacteriologist, Shiga, describing the constant finding of a definite bacillus in sixty-two cases of dysentery. Chantemesse maintains that nothing new was added by Shiga to the description of the bacillus studied ten years previously except such facts as were determinable only by the advances in bacteriological technic, to-wit: fermentation and agglutination reactions. Subsequently the work of Shiga has been confirmed in the Philippines, the United States, Germany and elsewhere. In the article mentioned Shiga announces that he did not find any differences between his bacillus of dysentery and that which was described by Celli, who, however, did not apply the agglutination tests. It is thus seen that Chantemesse makes out a rather strong case in favor of the prior discovery of the bacillus of dysentery by Widal and himself. The conditions outlined are somewhat similar to those surrounding the discovery and definite description of the pneumococcus, the bacillus of typhoid fever and the bacillus of leprosy. On account of the absence of many details in the early descriptions of such organisms it may be difficult to determine whether or not the early observers actually had before them the bacteria that subsequently are proved to be of great importance. Be that as it may, it certainly does not detract materially from the subsequent independent work by later investigators that the actual discovery of an organism was made years before; and certainly justice dictates that credit should be given investigators making such discoveries, even though the importance of the discovery is not fully recognized until made clear by the work of others.

1. Bulletin de l'Académie de Médicine, 1902, July 22.

Medical News.

DISTRICT OF COLUMBIA.

Surgeon to President.—Dr. George A. Lung, surgeon, U. S. Navy, has been chosen by the Navy Department to succeed Surgeon-General Rixey as medical attendant to the President.

Sanitary and Food Inspector.—The commissioners have appointed Dr. Hulbert Young sanitary and food inspector in the health department at $1200 a year, vice J. D. Miller, resigned. In making the recommendation for the appointment of Dr. Young, Dr. Woodward, the health officer, recommended that the United States Civil Service Commission be requested to hold an examination of applicants for appointment as sanitary and food inspector, charged with the enforcement of the milk and pure food laws.

Typhoid in Washington.—The typhoid epidemic is attaining alarming proportions in Washington. There were 256 cases in the city, August 20. The local health authorities are satisfied the poison germs are not found in the public water supply. Washington draws its water from the Potomac, miles above the city, and pollution on a scale sufficient to cause an outbreak of typhoid is declared impossible. The experts believe the first cases were caused by consumption of polluted milk, indicating the use of well water in the dairy. Flies carry the contagion from one house to another after the cases develop. It is claimed by the District health authorities that they have undoubted proof of the distribution of the disease by flies, and they say the distance which the germs are carried in this way does not usually exceed two blocks.

G. A. R. Hospital Corps Arrangements.—Dr. Harry Hurtt, chairman of the committee of physicians and surgeons on out-of-door work during the forthcoming encampment of the G. A. R., and three associates of the subcommittee on that work have arranged the routine details for the operation of the larger committee during the period of the reunion. The plan of campaign is to divide the city into districts, and apportion a number of physicians to each district. This corps will provide medical assistance immediately to all who may require such help, either prescribing for the sick in the physicians' own offices or at the veterans' lodgings. The schedule as now arranged provides that one or more physicians shall always be available, so that no veteran in need of medical assistance may have to search for a physician. A roll of druggists was prepared from whom the sick may obtain prescriptions during encampment week at a minimum rate, to be settled by the citizens' executive committee.

ILLINOIS.

Personal.—Dr. L. S. Wilcox, formerly of Champaign, now United States consul at Hankow, China, is visiting at his old home.——Dr. Eugene Cohn, St. Jacob, sailed for Europe, August 14.

Typhoid in Illinois.—In reply to an inquiry the State Board of Health reports there is little typhoid fever outside of Chicago. Joliet has 12 cases; Highland Park, 12; East St. Louis, 11; and Danville, 7.

Transportation of Dead Bodies.—The secretary of the State Board of Health has written us in regard to an error made in connection with the official order of the board governing the transportation of the dead, in which Rules 2 and 3 were confounded. Rule 2 was not changed, except that yellow fever bodies might be transported under this rule, and only slight change was made in Rule 3, except in the last paragraph, which prohibits the transportation after August 1, 1903, of any bodies dead of the diseases specified in this rule unless prepared for shipment by a licensed embalmer.

To Increase Fees.—A mass meeting of Moline and Rock Island physicians was held August 18 in Rock Island to consider the advisability of revising the fee bill and establishing a blacklist. About thirty were in attendance. Dr. Carl Bernhardi was chairman and Dr. Emily Wright secretary. The sentiment was unanimously in favor of revising the fee bill and also establishing a blacklist to protect physicians from deadbeats, and the chair was instructed to appoint a joint committee of the two cities to consider both questions and report. Fees will range from $1.50 to $2.50 for day and night calls, and $1 up for office cases.

Protection of Sight and Hearing of School Children.—The State Board of Health has issued a circular in which it details the method by which the tests of the sight and hearing of school children in the state may be made. The facts to be ascertained are the following:

1. Does the pupil habitually suffer from inflamed lids or eyes?
2. Does the pupil fail to read a majority of the letters in the number xx (20) line of the Snellen Test Types, with either eye?
3. Do the eyes and head habitually grow weary and painful after study?
4. Is the pupil probably "cross-eyed"?
5. Does the pupil complain of earache in either ear?
6. Does matter (pus) or a foul odor proceed from either ear?
7. Does the pupil fail to hear an ordinary voice at twenty feet in a quiet room?
8. Does the pupil fail to hear the tick of a good-sized watch at three feet, with either ear in a quiet room?
9. Does the pupil fail to breathe properly through either nostril?
10. Is the pupil an habitual "mouth-breather"?

If an affirmative answer is found to any of these questions the pupil should be given a card or letter of warning to be handed to the parent. The board recommends that examinations on this plan be made in every school in the state.

Chicago.

Dr. Simmons Improving.—Dr. Simmons has so far recovered from the effects of his recent illness and operation that he is able to travel. He sailed for Mackinac Island on the *Illinois*, on Wednesday.

The Death Rate.—Despite the mortality from typhoid fever (53) and acute intestinal diseases (139), the death rate for the week ended August 23 was lower than that for the corresponding week of 1901, the annual rate per 1000 being 15 and 15.59 respectively.

Personal.—Drs. Emil Ries and Carl Beck have returned from Europe.——Dr. Harold N. Moyer has been elected to the chair of neurology in the Chicago Eye, Ear, Nose and Throat College.——Dr. S. C. Plummer, Jr., has been appointed chief surgeon of the Rock Island system, vice Dr. W. D. Middleton, Davenport, Iowa, deceased.

Malaria Complicates the Typhoid Situation.—The malaria prevalence adds another complication to the typhoid situation. The presence of the malaria parasite has been demonstrated by the Health Department laboratory workers in patients presenting symptoms of typhoid and under treatment for this latter disease. It is not out of place to suggest the advisability of a bacterial examination wherever there is doubt whether a case is typhoid or malaria, or, possibly, both.

Dispensary Patient, Able to Pay Fee, Must Pay.—Dr. Sidney Kuh secured a judgment for $20, August 19, for medical services rendered to a charity patient of the free clinic and hospital of the Post-Graduate Medical School. The patient went to the institution in March for treatment for a nervous disorder, which had made her blind. As the physician ascertained that the patient had means he considered it was just that she should pay a reasonable fee.

Typhoid Fever.—During the week ended August 23, 53 deaths from typhoid fever occurred; during the previous week 45 deaths from this cause were reported, while for the corresponding week of 1901 only 20 deaths were recorded from this disease. The drastic measures employed in food condemnation, the missionary work of education in cleanly, decent American methods of living, pushed by the Visiting Nurse Association and the volunteer inspectors, is telling on the ignorance which, with its twin curse of poverty, is at the bottom of this excessive death rate from the typical filth disease; and notwithstanding there were eight more typhoid deaths last week than the week previous the Department of Health believes that the maximum has been reached.

IOWA.

Transfer of Insane.—The opening of the new state hospital at Cherokee will necessitate the transfer of 318 patients from Independence to Cherokee, 264 from Clarinda to Cherokee, 77 from Mt. Pleasant to Independence and 144 from Mt. Pleasant to Clarinda.

Personal.—Dr. T. G. Harriman, Hampton, has moved to Santa Barbara, Cal., where he will erect a sanatorium.——Dr. Daniel Backer, Whiting, has been adjudged insane and sent to the state hospital at Cherokee.——Dr. Miles J. Duncan and wife, Pleasantville, have moved to Dallas, Texas.

Dead Beats to be Blacklisted.—The physicians of Waterloo are forming a league as a means of protection against patients who can pay for the services of a physician, but who will not. This will not apply to worthy poor as each city physician will have a list of patients whom he will attend with no thought of receiving pay.

Cherokee Hospital Opened.—The new hospital for the insane at Cherokee was opened August 15, with appropriate

ceremonies under the direction of the State Board of Control. The structure cost $1,000,000 and will accommodate 1000 patients. The length of the main building is 980 feet, the width 600 feet.

Hospital News.—Work on the new City Hospital at Iowa Falls is progressing rapidly.——The contracts for constructing the laboratory and anatomic buildings of the University of Iowa medical department, have been let.——A new state hospital for inebriates is to be built at Mount Pleasant.——A new hospital has been instituted in Centerville, by Dr. Charles S. James and others.

KANSAS.

Personal.—Dr. William C. Bower, Lebanon, is spending two months in post-graduate work at Chicago.

Exodus of Illegal Practitioners.—Dr. Roby, secretary of the State Board of Medical Registration, ordered the arrest of Drs. Sofield and Gibson for practicing in Topeka without a certificate from the board. The two men have agreed to leave the state if the suit against them is withdrawn. This satisfies the board, as the most they desire is to get such men out of the state.

Unlicensed Practitioners.—At a recent meeting of the physicians of Shawnee county at Topeka it was voted to appropriate whatever funds might be necessary for the complete prosecution of unlicensed doctors in the county.——The committee of Bourbon County physicians appointed to make a fight on unregistered physicians and midwives has decided to ask the city attorney to prosecute all guilty of violating the state law, which provides that all physicians must be registered both with the state and the county clerk before they will be allowed to practice.

Sanitaria Consolidated.—The Bonner Springs Sanitarium Company has acquired the Grandview Sanitarium, located one-half mile west of the terminus of the Grandview electric line, Kansas City, Kan., and this institution will hereafter be operated by the Bonner Springs Sanitarium Company, under the title of "The Grandview Hospital for Mental Diseases." In order to classify the patients to the best possible advantage, it has been deemed advisable to operate the two institutions, one for nervous diseases and the other for those cases in which there is mental derangement. Dr. Millard P. Sexton is in charge.

MARYLAND.

Baltimore.

Free Telephone Calls for Physicians.—The Maryland Telephone and Telegraph Company has decided to grant free use of pay stations to persons desiring to call a physician.

Deaths and Diseases.—For the week ended August 23 there were 188 deaths, 150 white and 38 colored. Cholera infantum caused 31 deaths and other diseases of early infancy, 30. There were 6 deaths from typhoid fever and 68 new cases reported.

Personal.—Dr. T. R. Barber of Baltimore County, who has been for five or six weeks an inmate of the Maryland University Hospital, has returned home much improved.——Dr. G. Milton Linthicum is making an automobile trip along the coast of Maryland and New Jersey.——Dr. Aaron Friedenwald, who returned from Europe a few days ago, after a three-months' absence, was operated on August 20 for cancer of the stomach.

Pasteur Department of the Baltimore City Hospital.—Attention is called in a report just issued to the unsurpassed results obtained in this institution, founded five years ago and maintained by the College of Physicians and Surgeons under the direction of Dr. Nathaniel Keirle. It is modeled after the Institut Pasteur of Paris and the method employed is the result of personal investigation at that institute. Each patient is expected to remain 23 days. Patients are advised to bring a certificate from a veterinarian or physician as to the condition of the dog, and the animal should, if possible, be kept under observation to determine whether it has rabies. In all 322 persons were treated, with 1 death. Without the Pasteur preventive treatment the mortality from bites of rabid animals is about 5 to 80 per cent., depending on the situation and severity of the wounds. The 322 cases are divided as follows: Animals demonstrated rabid by subdural inoculation of rabbits, 182; other animals or human beings developed rabies as a result of the bite, 27; symptoms those of rabies but not demonstrated, 58; escaped observation, no reliable history, 52; wounds not the result of bites, 5, and demonstrated not rabid, 12. There were 242 male patients, 80 female, and 114 children up to and under 10 years. Of the patients 85 per cent. came from rural districts. The wounds were inflicted by dogs in 292 cases, by cats in 18, by horses in 3, by a calf, a pig, a cow and a human being each in 1 case. There were 174 bites on hands, 104 on limbs, 50 on the head, face and bare neck and 8 on the body. Dr. William H. Welch, in complimenting Dr. Keirle on his success, writes: "I know of no more suitable or worthy object of pecuniary aid from the state, which should esteem it a privilege and a matter of pride to support such an institution. I have taken a deep interest in this institute ever since its establishment, and it has been a great satisfaction to feel assured of the precision of your methods and to learn of the excellent results. I wonder if the community, or even the medical profession here, realize what a great work you have done and are doing and what it signifies to this and the neighboring states to have such an institution in Baltimore."

MISSOURI.

Louisiana Purchase Exposition Hospital Report.—Dr. Leonidas H. Laidley, medical director of the Exposition, has made his first monthly report of the number of patients treated in July on the Fair site. The total number of cases was 40, of which 27 were injuries.

Personal.—Dr. Frank W. Jelks, St. Louis, has moved to Hot Springs, Ark., where he has succeeded to the practice of his father, the late Dr. James T. Jelks.——Dr. William C. Tyree has been elected president of Kansas City Medical College, vice Dr. John H. Van Eman, deceased.——Dr. C. M. Jackson, assistant professor of anatomy in the University of Missouri Medical Department, Columbia, has been tendered the chair of anatomy in the University of Kansas.

Hospital for Colored Sick at Kansas City.—Through the concerted efforts of leading negroes of Kansas City, a hospital for negroes exclusively has been opened. It is to be known as the Lang Hospital, receiving its name from John Lang, manager of Blind Tom, the blind negro musician, who is one of the prime movers in its institution. The new hospital is to contain 50 beds, 20 of which will be for free patients and the other 30 for pay patients. The hospital is under the supervision of a directorate composed of twenty-five of the prominent negroes of Kansas City.

NEW YORK.

Bequest to Hospital.—By the will of the late Dr. Thomas Lothrop of Buffalo, $13,500 is bequeathed to the Buffalo Woman's Hospital.

Buffalo Personals.—Dr. Allen Jones has returned from Europe.——Dr. Julius Pohlman has returned from Scotland.——Drs. Julius Ullman and Charles Wall have returned from Canada.——Dr. Herman Mynter is now in Heidelberg.

Decrease in Death Rate.—The report of the Health Department for the week ended August 16 shows that the death rate for the week was considerably lower than that of the corresponding week of last year. In the week this year the death rate was 18.64 per 1000 as against 22.34 in 1901.

The Deaths in Buffalo.—The deaths for July were at the rate of 13.39 per 1000 per annum. There were but 29 deaths from cholera infantum, which is to be attributed to the prevailing coolness of weather. The total deaths were 413, as compared with 467 for the corresponding month in 1901.

Typhoid Gaining Ground.—The typhoid situation in Brooklyn is causing considerable alarm. Between July 1 and August 16 there were 43 deaths from the disease, while only 36 deaths occurred during the corresponding period of 1901. The cases reported show about the same relative increase. Typhoid fever is gaining ground each week in Greater New York. During the week of May 17 there were 20 cases reported; in the week of August 16 the number of cases was 104. The disease seems to be unusually prevalent just now at Bayside and some other places on Long Island.

High Infant Mortality.—In spite of the unusually cool weather the rate of infant mortality in New York this summer has been very high. It is attributed to the humidity, which is worse than heat. Since the free medical service has been introduced there has been a decided falling off in the rate of infant mortality. In 1881 it was 122 per 1000, in 1896 it was 76, and in 1901 it was only 62. Thus far this summer it will average as high as 68. The health department has printed a circular in several languages which is distributed among the tenement-houses, instructing mothers how to take care of their children in hot weather, and while it is impossible for the majority of mothers to follow all the rules laid down, a great

many can do so, and it has been very effective and has doubtless saved thousands of babies. The chief points in the circular concern the diet; mothers are particularly warned not to give children under 5 years fruit or raw food of any kind, and nothing but boiled milk in hot weather.

PENNSYLVANIA.

Anonymous Endowment.—An endowment fund of $25,000 for the Oil City Hospital has been provided by an anonymous donor.

Hospital Cornerstone Laid.—The cornerstone of the new hospital at Columbia was laid August 16. The structure is to cost $25,000.

Coatsville Hospital.—Ground was recently broken for a new hospital at Coatesville, to cost $60,000. More than half the amount has already been donated.

York Wants Municipal Hospital.—The Board of Health of York asks for $10,000 to erect a municipal hospital. It is feared that smallpox will again visit the town and there will be great need of a hospital in that event.

Philadelphia.

Bequest to Home for Incurables.—By the will of Sarah K. Davidson $2500 is bequeathed to the Philadelphia Home for Incurables.

Semi-Centennial Meeting.—The semi-centennial meeting of the American Pharmaceutical Association will be held in Philadelphia, beginning September 8, and will continue two weeks.

Physician Assaulted.—Dr. Louis J. Fabian was the subject of a brutal assault in his own office by an unknown man. The assailant felled his victim to the floor by a blow on the head with a weapon concealed in a newspaper. Dr. Fabian was seriously but not dangerously hurt. Robbery is the motive assigned for the deed.

Philadelphia Hospital.—The new children's department of the Philadelphia Hospital, furnishing accommodation for 80 inmates, will be ready for occupancy in October.——A new regulation of the hospital provides for greater stringency regarding the admission of cases of drunkenness. Heretofore many habitual drunkards have been accustomed to make their homes in the institution. Hereafter only aggravated cases of alcoholism will be admitted, and such inmates, so soon as able, will be required to work.

GENERAL.

Municipal Laboratories for Porto Rico.—The success of the chemical laboratory of the Superior Board of Health has been so marked that the cities of Ponce and Mayaguez have determined to establish similar institutions.

Army Deaths in the Philippines.—Between June 25 and July 10, 72 deaths occurred among the enlisted men of the Division of the Philippines. In addition to the 35 who died of cholera, 17 died of dysentery, 6 of malarial fever and the remainder of various other diseases. Of those who died of cholera 9 were Philippine scouts and natives.

Military Surgeons Needed or Not.—Officials in the Medical Department of the Army are considerably concerned over the great need of surgeons at this time. There are now 49 vacancies in the department, and only 30 applications have been made for the next examination. Experience has shown that of this number the department can scarcely expect more than 5 to succeed. The lack of army surgeons is especially embarrassing to the department, in view of the spread of cholera in the Philippines, and the consequent demand from the army in the East for medical assistance.—Officials of the war department have been surprised to learn from Gen. Chaffee that he can spare 100 contract surgeons of the army in the Philippines, and that if any of these temporary officers of the medical department desire to resign he advises that the resignation be accepted. All of them expect to be mustered out by February next, and Gen. Chaffee has recommended that in accepting resignations in the meantime the officers be allowed one month's leave, to take effect on their arrival at San Francisco, the resignation to be effective on the expiration of leave.

CANADA.

Hospital Addition.—Contracts have been let for a $20,000 addition to St. Joseph's Hospital, London, Ont. The hospital will thus be doubled in capacity and will have accommodation for 80 patients.

Personals.—Dr. Octavius Weld, Vancouver, B. C., has gone on a trip to Australia.——Dr. W. H. Drummond, Montreal, the habitant-poet, sailed for Glasgow July 16.——Dr. Thomas J. Moher, Peterborough, Ont., has been appointed assistant superintendent of the Asylum for Idiots at Orillia, Ont.

Montreal General Hospital.—The regular quarterly meeting of the Board of Governors of the Montreal General Hospital was held last week. The revenue for the past quarter amounted to $18,660, and the expenditure to $23,995. For the first six months of the current year the revenue is $7,500 less than for the corresponding period of last year. During the quarter 716 patients were admitted, and 8,108 out-patients.

Montreal School Children Must Be Vaccinated.—The vaccination by-laws of Montreal will be enforced this year by the health department as never before. A special circular has been drafted and will be sent to the directors and managers of all colleges, boarding schools, convents and common schools, informing them that they must insist on receiving vaccination certificates from every pupil attending school. Prompt prosecution in the recorder's court will follow every infraction of this law.

FOREIGN.

The Virchow Fund.—The additions to the Virchow Fund for Scientific Research received on the occasion of the scientist's eightieth birthday amount to a total of 53,652 marks, nearly $13,000.

Plague in India Increasing.—The Exchange Telegraph Company, on August 20, published a dispatch from Simla, saying that the plague mortality is increasing at the rate of a thousand weekly.

A Woman Privat Docent at Pavia.—Dr. Rina Montio of Como has been appointed docent of anatomy at the university of Pavia. She had previously been awarded a gold medal by the university for a competitive prize essay.

Home for Superannuated Physicians.—A Russian privy councillor named Raszetow has bequeathed 800,000 roubles for the construction and maintenance at Moscow of a home for aged and impecunious members of the medical profession.

Post-Graduate School in Germany.—The *Lokal Anzeiger*, Berlin, sees an evidence of the growing Americanization of the world in a plan to establish a post-graduate medical school at Frankfort on the American model. A private individual has contributed $500,000 for the establishment of this school.

Physicians Banquet Governor.—The professors of the Jalisco (Mexico) School of Medicine will give a banquet in honor of the governor of the state, General Curiel. The object of the banquet is to express gratification for the number of improvements which the state government has recently made at the institution.

Professional Secrecy.—A physician called to attend a sick woman at Nuremberg, Germany, became aware of the presence of the mutilated remains of a new-born babe in a vessel under the bed. He said nothing of his discovery, and in the criminal proceedings that followed, the courts endorsed his reticence as the correct interpretation of professional secrecy.

A Charlatan Punished.—The famous "miracle healer" Ast, was condemned at Lüneburg, Germany, to two months' imprisonment, July 23, on account of malpractice. He had been treating a boy who had hip disease, for chorea, and dissuaded the father from applying to a physician as the hip-trouble grew progressively worse. The *Allg. Med. Ct. Ztg.* is making a feature of publishing the details of all the suits instituted in Germany against charlatans.

Blindness is Decreasing in England.—The proportion of sightless to seeing persons has been watched with especial interest in Great Britain and the latest statistics indicate that it has fallen in a half century from about 1020 in the million to about 870, or more than 14 per cent. This decline has been so timed as to show conclusively that it is the result of better conditions of living, improved surgery and doubtless a decrease in the ratio of perilous to nonperilous employments for the masses of the people.

Deaths Abroad.—The death is reported from Rotterdam of Dr. B. Van Doort, a prominent dermatologist. His works on leprosy in the Dutch East Indies were particularly noticeable. ——Dr. G. Loimann of Franzensbad died July 29, aged 49. His name is familiar on account of his numerous contributions to Prague, Vienna and Berlin professional literature. They were mostly in the lines of gynecology and balneology.——The death is announced of Dr. Cesare Taruffi, professor of pathologic anatomy at Bologna.

The Elimination of Nitrogen.—It is announced that Professor Joseph Seegen proposes to offer a prize under the auspices of the mathematical and natural science class of the Imperial Academy of Sciences, in Vienna, for the best answer to the following question: Is any part of the nitrogen of the albuminates which have undergone metabolism in the animal body eliminated either by the lungs or by the skin in the gaseous form? The value of the prize is 6000 kronen, about $1000. The essays may be written in German, French or English, and must be sent in before Feb. 1, 1904.

Compulsory Vaccination in Uruguay.—The National Council of Hygiene at Montevideo has issued a decree which will cause much trouble to the shipping interests. It provides that all captains of steamers arriving from beyond seas must present certificates from the sanitary authorities of the port of embarkation, stating which of the third-class passengers have been vaccinated before embarkation, or otherwise a certificate of the operation having been performed on board. All third-class passengers for Montevideo must produce this certificate, or else must be vaccinated, and, failing this, none, not even through passengers, will be allowed to land. The authority of the council does not extend, constitutionally, to deciding what passengers may or may not land in the country. Moreover, it has assumed an authority greater than that of the chambers, for, at the latest date by mail, these had not yet declared vaccination compulsory in the republic.

Evolution of the Determination of Sex.—According to statements made by friends of the late Dr. Schenck, his theory of sex determination was very largely developed by his later researches. His latest theory maintained that mothers by persistence in special diet could lay the foundation of particular talents and capacities in their children. He hoped to extend this theory to the point where parents might not only gratify their wish to have a son, but might have a son who would become a talented musician, author or mathematician. Dr. Schenck was confident that he would be able eventually to make it possible for mankind to control the entire mental and physical qualities of its progeny, thus avoiding the production of degenerate specimens and inaugurating an era of healthy and vigorous humanity. Two of Dr. Schenck's sons are physicians, who intend to devote their professional careers to developing their father's theory.

The Health of Liverpool.—The report of the Medical Officer of Health for Liverpool during 1901 has just been published. The report is most interesting and valuable and reflects great credit on Dr. E. W. Hope and staff for the efficient character of the work conducted by them throughout the year. The birth rate was 32 per 1,000, or 1.3 less than the five-year average. The death rate was 21.6, or 1.5 below that of the previous year. Particulars are given of the steps taken to deal with bubonic plague cases on the importation of that disease into Liverpool, and the steps that were taken before to prevent infected persons arriving in the town. The same also applies to smallpox. Reference is made to the magnificent work accomplished on behalf of the "infected" port of Liverpool, and the way in which, although plague and smallpox were present in the city, quarantine restrictions abroad were practically allowed to be suspended. The Hon. Jas. Boyle, United States Consul in Liverpool, is credited with being responsible in a large—if not total—degree for this excellent arrangement, which has meant so much to the trade and prosperity of the port, and the report declares that too much can not be said on behalf of that official's intelligence and kindly and courteous consideration for the welfare of the port.

LONDON LETTER.

The London School of Tropical Medicine.

Sir Francis Lovell, C.M.G., formerly surgeon-general at Trinidad, who last winter undertook a mission to the tropics with the object of securing the support of British residents on behalf of the London School of Tropical Medicine, has recently returned after a very successful mission. He visited Bombay, Calcutta, Ceylon, Singapore, the Straits Settlements, the Federated Malay States, Penang, Hong Kong, Japan and Canada. Everywhere he received a sympathetic welcome from the authorities, the leading members of the medical profession, and the representatives of the principal merchants, native as well as British, and almost everywhere he received promises of active support. At Bombay a wealthy Parsee gentleman was so impressed by the importance of the object that he contributed 100,000 rupees. There were many givers, including the Gaekwar of Baroda, of sums of 1000 to 1200 rupees. At Calcutta it is in contemplation to found a local school of Tropical Medicine and the support both of the government and of the members of the Indian Medical Service is not unnaturally reserved for the promotion of that scheme. In Ceylon the appeal was warmly taken up by the profession. At Singapore a committee has been formed for the same purpose, and promises of annual contributions have been received from leading firms. The governments of the Straits Settlements and the Federated Malay States have each promised an annual contribution of $500 for five years. At Penang a committee under the chairmanship of Dr. Freer, colonial surgeon, has collected some $3000. At Hong Kong a committee, of which Dr. Ho-Kai is chairman, has already collected a considerable sum, and the government has promised an annual subscription of $500 a year for five years. Altogether the result of Sir Francis Lovell's mission has been that he has received promises of subscriptions to the amount of about $5000 a year, and has brought back a sum of nearly $50,000. This will enable the authorities of the London School of Tropical Medicine to enlarge the buildings, which are now quite inadequate for the steadily-increasing number of students. The accommodation for resident students will be doubled, a lecture room, a museum, and mosquitarium will be provided. The new buildings will be proceeded with at once. In addition to the money collected by Sir Francis Lovell, he has obtained for the London School of Tropical Medicine the right of appointment in perpetuity to the office of director of the Research Institute recently established at Kuala Lumpur by the Government of the Federated Malay States. The appointment, which is of the value of $3750 a year, with free furnished quarters, is tenable for 3 years and may thus be regarded as a liberally endowed scholarship offering unrivaled opportunities for the study of tropical diseases. With this splendid appointment in its gift, the London School of Tropical Medicine will be able to encourage men who show ability for research to devote themselves to work which can not fail to lead to important results.

The King's Interest in Appendicitis.

The king, who has now completely recovered, has shown a scientific interest in his own malady in a striking fashion, and at the same time complimented the surgical profession in a manner characteristic of his consummate tact. Accompanied by Sir Frederick Treves he paid his first unofficial visit to the Royal College of Surgeons, of which he is an Honorary Fellow, for the purpose of inspecting its magnificent collection of specimens bearing on appendicitis and the comparative anatomy of the cecum and appendix. He was much interested in all that he saw.

The Imperial Vaccination League.

It is remarkable that antivaccinationists are more numerous and active in the country, which has the honor to claim Jenner as one of its most famous sons, than in any other. To counteract their pernicious propaganda "The Imperial Vaccination League" has been founded. As previously stated in THE JOURNAL, it has received the support of many of the leaders of the profession and of many prominent laymen. The league is now commencing an active campaign. It has seized the opportunity of pointing out that the epidemic of smallpox which is now declining in London has cost 1500 lives and involved the serious illness of 7500 people. The expense of attempting to isolate the sufferers has been over $2,500,000, and the success far from complete. The object of the league is to insure as complete protection in this country against smallpox as exists in Germany. The Vaccination Act of 1898, which recognized the "conscientious objector," and allowed him to expose his children to the risk of taking smallpox, will expire at the end of 1903, and some fresh legislation will be necessary. The number of children exempted from vaccination in 1898, 1899 and 1900 was 275,593, but this total represents the arrears of many years, and strange to say, the number of children born in these three years who have escaped vaccination from all causes has diminished considerably as a result of the act. The league, therefore, does not propose to urge the abolition of the "conscientious objector." It desires to assist the community to study carefully other amendments to the act. Among these it places in the first rank obligatory revaccination of school children at a specified age. It also proposes to formulate the best expert opinion as to whether the administration of the vaccination is best left where it is now, in the hands of the poor-law authorities, or whether rapidity of action in the presence of smallpox would not be promoted by placing it in the hands of the sanitary authority of each district; or finally, whether it would not be advisable to create a special central department expressly to carry out a measure of such imperial importance as the vaccination law. The league will also consider if the

entire supply of glycerinated calf lymph should not be guaranteed and regulated by some public authority. In Germany for 55,000,000 of people there are 22 state laboratories for the preparation of lymph. In Great Britain and Ireland for 40,000,000 of people we have but one. Private practitioners have to trust to the vendors of lymph without any guarantee as to its age or quality. If a central authority for vaccination were established under the Local Government Board, the provision of an adequate amount of lymph to meet all ordinary demands would be an important part of its duties. The league desires to see "efficient vaccination" defined in the act of 1903, and that all certificates of vaccination should show if the vaccination has been "efficient" or not. The present state of the law makes it possible for ignorant parents to get their children vaccinated in a way which provides very inadequate protection. The league will put the opinion arrived at on these before members of both Houses of Parliament. It will assist ministers of all denominations and other persons working among the poor, or interested in the question, to make known, by means of literature, parish lectures, meetings, etc., the necessity for value of vaccination and revaccination. It will encourage the establishment of branches all over the country in support of vaccination.

The Plague.

India: The mortality during the week ending July 12 was 1158—an increase compared with the previous week, when the number was 1058. In Bombay City the deaths numbered 22 against 26 in the previous week. In the rest of the Bombay Presidency the deaths were 717, and in Mysore State 392, an increase of 214 on the previous week. In the Punjab the deaths fell to 95. In the week ending July 19 the deaths in all India amounted to 1100, in Bombay City 35.

Egypt: During the week ending July 27 the fresh cases numbered 10, all at Alexandria; 19 cases remained under treatment, 16 at Alexandria. During the week ending August 3 5 fresh cases occurred.

Cape of Good Hope: During the week ending July 12 2 fresh cases occurred at Port Elizabeth, none during the week ending July 19.

Hong Kong: During the week ending July 31 33 fresh cases and 29 deaths occurred; during the week ending August 2 there were 31 new cases and 34 deaths; August 9, 14 cases and 13 deaths.

Correspondence.

An Aid to the Diagnosis of Appendicitis.

HARRISON, ARK., Aug. 23, 1902.

To the Editor:—After examining a patient with most of the ordinary objective and subjective symptoms of appendicitis—tumefaction, muscular rigidity, fever, pain and cutaneous hyperesthesia—the physician is often still in doubt whether the case is or is not one of appendicitis. In just such cases, indeed in all cases, for the last two years I have learned to depend very materially on the following plan to aid in the diagnosis: Have the patient lie on the back, with the legs flexed on the thighs, the thighs flexed, the feet resting evenly on the bed, the lower limbs held or steadied in this position by an assistant. Then place the tip of one finger on the skin of the abdomen over the seat of greatest tenderness—usually McBurney's point—press down slowly with about as much force as the patient will tolerate. Still keep up this pressure with the one finger, and at the same time use the fingers of the other hand to press and palpate over other parts of the abdomen, when much, if not all of the tenderness and soreness which was complained of by the patient before you commenced the pressure with the one finger over the tender point will have disappeared. In other words, while pressure is being made over the origin of the inflamed appendix sensibility to pressure over other tender portions of the abdomen is lessened.

LEONIDAS KIRBY, M.D.

The Removal of Foreign Bodies from the Eye.

BURLINGTON, IOWA, Aug. 25, 1902.

To the Editor:—I would like to add a brief supplement to my remarks in the discussion of Dr. Sweet's paper at the Saratoga meeting. By reference to these remarks it will be seen that I reported a case of foreign body in the eye in which I felt that the *x*-ray photography was of the character criticised by Dr. Lippincott in the same discussion. My suspicion of failure in the *x*-ray work was borne out by the subsequent history of the case, which is as follows:

On my return home the 1st of July I found that the eye was becoming soft and shrunken and had every sign of chronic cyclitis. I thereupon enucleated it. The foreign body, which was shown in the picture exhibited, as apparently high up in the globe or in the orbit (as the photographer said) was really in direct line from the point of entrance—two-thirds of it within the eyeball and the other third imbedded in the tendon of the inferior oblique muscle.

This is simply an illustration of Dr. Lippincott's conclusion that it requires a special skill to make *x*-ray photographs truly representative of the conditions. Truly yours,

H. B. YOUNG.

[NOTE: The discussion referred to appears on page 473 of this issue.—ED.]

Book Notices.

THE MEDICAL STUDENT'S MANUAL OF CHEMISTRY. By R. A. Witthaus, A.M., M.D., Professor of Chemistry, Physics and Toxicology in Cornell University Medical College in New York City. Fifth Edition. Cloth. Pp. 678. Price, $3.50. New York: Wm. Wood & Co. 1902.

In this fifth edition of Witthaus' chemistry a number of changes have been made. The section of chemical physics has been somewhat extended to include brief considerations of some questions of physics which have largely entered into the chemistry of the present day. The section on inorganic chemistry has been condensed, while that on organic chemistry has been re-arranged, largely rewritten and extended. The number of references to the subject of physiologic chemistry, which were included in the former editions, have been omitted, and the subject has been treated, as regards its more important branches, in a section by itself. The laboratory teachings, which formed a special section in the former editions, is omitted here as being better taught from special laboratory manuals. The book is thus an improvement on preceding editions and will retain the favor it has received in the past as a well designed medical student's manual of the subject of chemistry.

GIBSON AND RUSSELL'S PHYSICAL DIAGNOSIS. Third Edition, Revised and Rewritten. By Francis D. Boyd, C.M.G., M.D., F.R.C.P. Ed., Assistant Physician, Edinburgh Royal Infirmary. With 144 Illustrations. Cloth. Pp. 448. Price, $3.00. New York: D. Appleton & Co. 1902.

This work gives in compact and readable form the principal facts of clinical diagnosis. It is not a complete substitute for the larger works, but it will have its uses. It is handsomely illustrated, well written and in the main complete. There are some omissions, however; for instance, in the part on the nervous system, no mention is made of the Kernig sign which, whatever its value, can hardly be neglected by the diagnostician of the present day. There is much that necessarily must be stated briefly, perhaps a little too briefly in a work of this kind.

CLINICAL ESSAYS AND LECTURES. By Howard Marsh, F.R.C.S., Surgeon to and Late Lecturer on Surgery at St. Bartholomew's Hospital. Cloth. Pp. 301. Price, $3.00. Philadelphia: P. Blakiston's Son & Co. 1902.

This is another collection of clinical lectures. The author states he hopes it contains little found in the handbooks of the day and that it will contribute something to the text-book teaching in regard to the diagnosis and treatment of diseases. The lectures are well written and some of them specially worthy of reading. For example, the one on the etiology and mistakes of diagnosis. Altogether the book forms a collection of papers of decided interest on subjects that may occasionally occur to test the resources of the physician and surgeon, more especially the latter.

THE PRINCIPLES AND PRACTICE OF BANDAGING. By Gwilym G. Davis, M.D., University of Pennsylvania and Göttingen. Illustrated from Original Drawings by the Author. Cloth. Pp. 146. Price, $1.50. Philadelphia: P. Blakiston's Son & Co. 1902.

This little volume is based on a previous one by the author in 1891, but has been completely rewritten and reillustrated. The author thinks the proper use of the gauze bandage and their substitutes for others have caused a great deterioration

in their application. There is, he says, a right way as well as a wrong way to apply even gauze bandages and the right way is the best way. The principal thing, it seems, is not the appearance, but the security and non-irritation by unnecessary folds or wrinkles. One thinks sometimes that the elaborate bandages if followed too closely would be apt to be lacking in at least one of these essential features. The book is, however, one of the best we have seen covering the general subject of bandaging, a matter in regard to which surgeons are apt to be perhaps more slovenly than is necessary or esthetic.

A MANUAL OF PRACTICAL MEDICAL ELECTRICITY. The Roentgen Rays and Finsen Light. By Dawson Turner, B.A., M.D., F.R.C.P. Ed., M.R.C.P. Lond., Fellow of the Physical Society. Third Edition, Revised and Enlarged. Cloth. Pp. 396. Price, $3.00. New York: Wm. Wood & Co. 1902.

The American edition of this third English edition gives in a comparatively brief and readily understandable way the general facts of medical electricity including not only the points in physics which the doctor ought to know, but those of electrophysiology bearing on the subject of the medical uses of electricity. The author has added several chapters at the end of this edition on the Finsen light and Roentgen rays which will be found useful and instructive. He points out the difference between the two. In his judgment, the consensus of the best opinion is that the violet light is more bactericidal and does not attack the tissues, while the Roentgen rays attack the tissues and are not specially bactericidal. The work is very handsomely gotten up and amply illustrated.

A TEXT-BOOK OF PRACTICAL THERAPEUTICS: With Especial Reference to the Application of Remedial Measures to Disease and Their Employment On a Rational Basis. By Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. With Special Chapters by Drs. G. E. de Schweinitz, Edward Martin and Barton C. Hirst. New (9th) Edition. Pp. 851, with 105 Engravings and 4 Colored Plates. Cloth. Price $4.00. Philadelphia and New York: Lea Brothers & Co. 1902.

The ninth edition of this well-known work has been very largely revised and brought up to date. The author has added nearly one hundred illustrations, and in its present form we believe it one of the very best works on therapeutics for the student or general practitioner. The reader will find in it a large proportion if not quite all of the newer remedies that are of any value and in this respect alone it has a very special merit. As in the former editions the non-medical methods of treatment are reviewed and there has been no contraction of the text in this particular.

CLINICAL LECTURES ON SURGICAL SUBJECTS. Delivered in University College Hospital. By Christopher Heath, Past President of the Royal College of Surgeons of England. Second Series. Cloth. Pp. 343. Price, $2.00 net. Philadelphia: P. Blakiston's Son & Co. 1902.

The publication of clinical lectures is an easy way to write a book, and when they are good, the book may be a valuable one. This little volume contains the second series of lectures delivered by Mr. Heath at the University Hospital during the last few years, including also the Hunterian oration of 1897, and two of the Lane lectures given in San Francisco by the author. Altogether it is an instructive and very readable little volume.

MOTHER AND CHILD. By Edward P. Davis, A.M., M.D., Professor of Obstetrics in the Jefferson Medical College. Cloth. Pp. 264. Price, $1.50. Philadelphia: J. B. Lippincott Co. 1902.

This seems to us the best little work for popular instruction on this subject that we have seen. We bespeak its general introduction to the laity under medical advice. It contains instructions which the physician would give to his patient in the care of the mother and child. Of course, there will be many supplementary questions and advice, but the mother or nurse who reads this will be pretty well posted as to what to do at the right time and in the right place.

THE ESSENTIALS OF HISTOLOGY: Descriptive and Practical, for the Use of Students. By E. A. Schaefer, LL.D., F.R.S., Professor of Physiology in the University of Edinburgh. Sixth Edition, Revised and Enlarged, with 463 Illustrations. Cloth. Pp. 416. Price, $3.00. Philadelphia and New York: Lea Bros. & Co. 1902.

The present sixth edition of Schaefer's work is considerably enlarged, particularly in the description of the structure of the central nervous system and changes in illustrations. It is likely to continue in favor as one of the most convenient brief manuals of this important subject.

State Boards of Registration.

The Illinois State Board of Health held its regular quarterly examination at Chicago, July 9, 10 and 11, of candidates for license to practice medicine; 138 candidates were examined, of whom 130 passed and 8 failed; 110 questions were asked on 11 subjects, and a grade of 75 per cent. was required in order to pass. The next quarterly examination will be held in Chicago, Oct. 15, 16 and 17. The following table is supplied by Dr. J. A. Egan, secretary, Springfield:

PASSED.

Candidate.	Sch. of Pract.	College.	Year Grad.	Per cent.
1335	R.	Rush Medical College	1902	82
1341	R.	Rush Medical College	1902	90
1343	R.	Rush Medical College	1902	89
1344	R.	Rush Medical College	1902	82
1351	R.	Rush Medical College	1902	89
1354	R.	Rush Medical College	1902	79
1357	R.	Rush Medical College	1902	87
1359	R.	Rush Medical College	1902	87
1367	R.	Rush Medical College	1902	87
1368	R.	Rush Medical College	1902	83
1373	R.	Rush Medical College	1902	84
1374	R.	Rush Medical College	1902	87
1375	R.	Rush Medical College	1902	90
1382	R.	Rush Medical College	1902	87
1383	R.	Rush Medical College	1902	84
1384	R.	Rush Medical College	1902	82
1388	R.	Rush Medical College	1902	87
1390	R.	Rush Medical College	1902	87
1392	R.	Rush Medical College	1902	82
1393	R.	Rush Medical College	1902	79
1396	R.	Rush Medical College	1902	80
1399	R.	Rush Medical College	1902	83
1400	R.	Rush Medical College	1902	85
1402	R.	Rush Medical College	1902	87
1403	R.	Rush Medical College	1902	88
1404	R.	Rush Medical College	1901	89
1405	R.	Rush Medical College	1901	79
1406	R.	Rush Medical College	1902	80
1412	R.	Rush Medical College	1902	86
1414	R.	Rush Medical College	1902	84
1421	R.	Rush Medical College	1902	83
1423	R.	Rush Medical College	1901	85
1424	R.	Rush Medical College	1902	88
1435	R.	Rush Medical College	1902	86
1437	R.	Rush Medical College	1902	82
1439	R.	Rush Medical College	1902	88
1445	R.	Rush Medical College	1902	81
1446	R.	Rush Medical College	1902	89
1449	R.	Rush Medical College	1902	80
1450	R.	Rush Medical College	1902	78
1451	R.	Rush Medical College	1902	85
1452	R.	Rush Medical College	1889	81
1459	R.	Rush Medical College	1902	87
1463	R.	Rush Medical College	1902	86
1464	R.	Rush Medical College	1902	82
1465	R.	Rush Medical College	1902	86
1466	R.	Rush Medical College	1902	84
1467	R.	Rush Medical College	1902	84
1468	R.	Rush Medical College	1902	85
1469	R.	Rush Medical College	1902	89
1338	R.	Rush Medical College	1902	84
1454	R.	Rush Medical College	1902	85
1337	R.	Northwestern University Medical School	1902	86
1342	R.	Northwestern University Medical School	1902	88
1353	R.	Northwestern University Medical School	1902	87
1376	R.	Northwestern University Medical School	1902	83
1422	R.	Northwestern University Medical School	1902	91
1434	R.	Northwestern University Medical School	1902	93
1442	R.	Northwestern University Medical School	1902	91
1461	R.	Northwestern University Medical School	1902	88
1413	R.	Northwestern University Medical School	1902	95
1336	R.	College of Phys. and Surgs., Chicago	1902	87
1352	R.	College of Phys. and Surgs., Chicago	1902	80
1358	R.	College of Phys. and Surgs., Chicago	1902	85
1363	R.	College of Phys. and Surgs., Chicago	1902	82
1369	R.	College of Phys. and Surgs., Chicago	1902	85
1391	R.	College of Phys. and Surgs., Chicago	1902	87
1394	R.	College of Phys. and Surgs., Chicago	1902	84
1407	R.	College of Phys. and Surgs., Chicago	1902	86
1410	R.	College of Phys. and Surgs., Chicago	1902	88
1430	R.	College of Phys. and Surgs., Chicago	1902	90
1433	R.	College of Phys. and Surgs., Chicago	1902	75
1448	R.	College of Phys. and Surgs., Chicago	1902	89
1456	R.	College of Phys. and Surgs., Chicago	1902	84
1457	R.	College of Phys. and Surgs., Chicago	1902	86
1470	R.	College of Phys. and Surgs., Chicago	1899	81
1398	R.	College of Phys. and Surgs., Chicago	1902	84
1462	R.	Harvey Medical College	1902	86
1345	R.	Harvey Medical College	1902	90
1347	R.	Harvey Medical College	1902	80
1355	R.	Harvey Medical College	1902	75
1370	R.	Harvey Medical College	1902	83
1378	R.	Harvey Medical College	1902	85
1379	R.	Harvey Medical College	1902	83
1386	R.	Harvey Medical College	1902	81
1395	R.	Harvey Medical College	1902	88
1415	R.	Harvey Medical College	1902	91
1419	R.	Harvey Medical College	1902	75
1420	R.	Harvey Medical College	1902	76
1436	R.	Harvey Medical College	1902	86
1438	R.	Harvey Medical College	1902	83
1443	R.	Harvey Medical College	1902	79
1460	R.	Harvey Medical College	1902	90
1471	R.	Harvey Medical College	1902	87
1472	R.	Harvey Medical College	1902	91

Candidate.	Sch. of Pract.	PASSED. College.	Year Grad.	Percent.
1387	R.	Barnes Medical College	1902	79
1371	H.	Hering Medical College	1902	84
1350	H.	Hering Medical College	1900	79
1380	R.	Hospital College of Medicine, Louisville	1902	79
1426	R.	Hospital College of Medicine, Louisville	1902	88
1429	R.	Hospital College of Medicine, Louisville	1902	86
1432	R.	Hospital College of Medicine, Louisville	1902	81
1458	R.	Hospital College of Medicine, Louisville	1902	84
1356	R.	Dept. of Medicine, U. of Pa., Phila	1902	87
1453	R.	Dept. of Med., Univ. of Pa., Phila	1902	88
1401	R.	Dept. of Med. and Surg., Univ. of Mich	1902	85
1360	R.	Coll. of M. and S., U. of Minn., Mpls	1901	87
1365	E.	Eclectic Medical Institute, Cincinnati	1902	88
1377	R.	Illinois Medical College	1902	85
1381	R.	National Medical University, Chicago	1902	80
1385	R.	Baltimore Medical College	1893	82
1389	R.	Med. Dept. Washington Univ., St. Louis	1899	83
1408	R.	Med. Dept. Univ. of Christiania, Norway	1891	85
1409	R.	Missouri Medical College, St. Louis	1898	83
1411	R.	Keokuk (Iowa) Medical College	1902	75
1416	R.	Northwestern Univ. Women's School	1902	88
1425	R.	University of Bucharest, Roumania	1902	88
1441	H.	Hahnemann Med. Coll. and Hosp., Phila.	1901	89
1340	H.	Hahnemann Medical College, Phila	1902	89
1362	H.	Hahnemann M. Coll. and Hosp., Chicago	1902	81
1455	R.	Jenner Medical College	1902	81
1348	H.	Chicago Homeopathic Medical College	1902	84
		FAILED.		
1339	R.	College of Phys. and Surgs., Chicago	1902	53
1349	R.	Keokuk (Iowa) Medical College	1902	74
1346	R.	Rush Medical College	1902	73
1361	H.	Chicago Homeopathic Medical College	1902	70
1372	H.	Barnes Medical College	1902	71
1417	E.	Eclectic Medical Institute, Cincinnati	1900	54
1428	R.	Keokuk (Iowa) Medical College	1902	65
1431	R.	Keokuk (Iowa) Medical College	1902	73

California Report.—Dr. George G. Gere, secretary of the Board of Medical Examiners of the State of California, reports the examination held at San Francisco, August 5 to 7, as follows: Number of subjects examined in, 9; total number of questions, 90; percentage required to pass, 75; written examination; number examined, 46; number passed, 29; number failed, 17.

Candidate.	Sch. of Pract.	PASSED. College.	Year Grad.	Percent.
A. D.	R.	Jefferson Medical College, Phila	1901	75 5-9
T. C.	R.	Cooper Medical Coll., San Francisco	1902	*
W. S.	R.	Cooper Medical Coll., San Francisco	1902	80 5-9
J. C.	R.	Cooper Medical Coll., San Francisco	1902	81 8-9
W. H.	R.	College of P. and S., San Francisco	1902	78 2-9
S. L.	R.	College of P. and S., San Francisco	1902	75 1-3
R. B.	R.	N. W. Univ. Med. School, Chicago	1902	83 5-9
W. W.	R.	University of Cal., San Francisco	1902	79 8-9
H. P.	R.	University of Cal., San Francisco	1902	78 1-3
E. T.	R.	University of Cal., San Francisco	1902	83 2-3
J. N.	R.	University of Cal., San Francisco	1902	77 2-9
G. P.	R.	University of Cal., San Francisco	1902	80 5-9
L. T.	R.	University of Cal., San Francisco	1902	80 1-9
C. G.	R.	University of Cal., San Francisco	1902	76 4-9
M. D.	R.	University of Cal., San Francisco	1902	77 1-3
J. P.	R.	University of Cal., San Francisco	1902	89
W. C.	R.	University of Cal., San Francisco	1902	81 7-9
J. L.	R.	University of Cal., San Francisco	1902	75 1-3
E. F.	R.	University of Cal., San Francisco	1902	76 8-9
B. V.	R.	University of Cal., San Francisco	1902	79 1-9
E. B.	R.	University of Cal., San Francisco	1902	79
E. M.	R.	University of Cal., San Francisco	1902	76 7-9
W. S.	H.	Hahnemann Med. Coll., Chicago	1876	75 1-9
M. S.	R.	Johns Hopkins Univ., Baltimore	1902	88 4-9
J. V.	R.	Med. Dept. Johns Hopkins U., Balt.	1902	84 2-3
C. B.	R.	Med. Dept. Johns Hopkins U., Balt.	1902	88 4-9
S. H.	R.	Med. Dept. Johns Hopkins U., Balt.	1902	83 1-3
E. P.	R.	Harvard Medical School, Boston	1898	79 7-9
S. V.	H.	Hahnemann Med. Coll., Phila	1902	78 4-9
		FAILED.		
T. P.	R.	Cooper Medical Coll., San Francisco	1902	50 †
W. C.	R.	Barnes Medical College, St. Louis	1898	56 8-9
Z. D.	R.	Baltimore Univ. School of Med.	1902	61 5-9
S. T.	R.	N. W. U. Woman's M. Sch., Chicago	1902	66 2-3
J. R.	R.	Kansas City Medical College	1894	46 4-9
R. P.	R.	Kentucky Sch. of Med., Louisville	1885	63 1-3
J. C.	R.	Med. Dept. Univ. City of New York	1879	66 2-3
W. B.	R.	St. Louis Medical College	1902	45 5-9
J. A.	R.	Coll. Phys. and Surgs., Cincinnati	1898	66 1-9
H. W.	R.	Ensworth Med. Coll., St. Joseph, Mo.	1894	70 4-9
O. E.	R.	College of P. and S., San Francisco	1902	68
J. D.	R.	College of P. and S., San Francisco	1902	70 5-9
C. P.	R.	College of P. and S. San Francisco	1902	63 7-9
B. L.	R.	College of P. and S., San Francisco	1902	71 4-9
P. F.	R.	College of P. and S., San Francisco	1902	69 2-3
L. M.	R.	College of P. and S., San Francisco	1902	70 5-9
M. F.	R.	University of Cal., San Francisco	1900	70 5-9

* Percentage given as 65, which must be an error.
† Conditioned in anatomy.

Married.

CHARLES S. WALDEN, M.D., to Miss Lucy F. Taylor, both of Sedalia, Mo.

P. W. CAPEHART, M.D., to Miss Ray Hirsch, both of Norfolk, Va., at Hampton, Va., August 9.

FRANK M. DANIEL, M.D., Elwood, Ind., to Miss Caroline Clarke of Indianapolis, August 19.

CLAEBURNE W. EVANS, M.D., to Miss Lulu Robison, both of Modesto, Cal., at Reno, Nev., August 7.

FRANK GUILLEMONT, M.D., Niagara Falls, N. Y., to Miss Margaret Grant of London, Ont., August 12.

WILLIAM W. EARLY, M.D., Plymouth, N. C., to Mrs. Rosa E. McDuffie of New York, at Norfolk, Va., July 18.

Deaths and Obituaries.

Nicholas Williamson, M.D. University of the City of New York, 1871; College of Physicians and Surgeons, New York, 1872; mayor of New Brunswick, N. J., from 1895, a member of the American Medical Association, New Jersey State Medical Society, Middlesex County Medical Society and the Roentgen Ray Society of America, and one of the leading public men and physicians of New Brunswick, died at his home in that city, August 16, from typhoid fever, after an illness of 18 days, aged 58.

Edwin F. Wilson, M.D. University of Pennsylvania, Philadelphia, 1885, a prominent physician and teacher of Columbus, Ohio, professor of therapeutics and clinical medicine in Ohio Medical University; a member of the American Medical Association, American Academy of Medicine, Ohio State Medical Society and Columbus Academy of Medicine, died at the Protestant Hospital, Columbus, August 18, from diabetes, after an illness of more than two years, aged 45.

John Bryant, M.D. Transylvania University, Lexington, Ky., 1837, one of the oldest and most respected physicians of Jackson County, Mo., died at his home in Independence, August 16, after an illness of two years, aged 85.

Wilhelmina Short, M.D. Woman's Medical College, Kansas City, Mo., 1901, wife of Dr. John T. Short, died at her home in Oklahoma City, Okla., July 10, from tuberculosis after an illness of less than five months.

Swepson W. Greening, M.D. Memphis (Tenn.) Hospital Medical College, 1894, a physician of Campti, La., committed suicide, August 13, by taking morphin while despondent over the death of his two children.

Thornsbury B. Yates, M.D. University of Maryland, 1878, died at Grafton, W. Va., August 8, aged 44. The immediate cause of his death was heart failure, superinduced by a long-standing spinal affection.

William J. Larmer, M.D. College of Physicians and Surgeons, New York, 1878. The body of Dr. Larmer was found floating in the Hudson River, August 19. Suicide or foul play is suspected.

Menzo Barkman, M.D. Albany (N. Y.) Medical College, 1879, of Binghamton, N. Y., died in the Albany Hospital, August 10, after an operation for cancer of the stomach, aged 46.

Thomas C. Armstrong, M.D. Kentucky School of Medicine, Louisville, 1851, the oldest physician in Garrard County, Ky., died at his home in Bryantsville, August 14, aged 82.

Fred. S. Cossitt, M.D. Western Reserve University, Cleveland, 1893, died at his home in Greenville, Pa., August 11, a week after an operation for appendicitis, aged 34.

J. C. Cowen, M.D. Medical College of Alabama, Mobile, 1882, died at his home in Moss Point, Miss., August 18, after an illness of more than two months, aged 47.

Frederick A. Warner, M.D. Western Reserve University, Cleveland, 1855, for many years a practitioner of Lowell, Mass., died at Clifton Springs, N. Y., August 12.

Joseph Iutzi, M.D. Medical College of Ohio, Cincinnati, 1871, died at his home in Richmond, Ind., August 18, after a long illness from paralysis, aged 56.

William W. Campbell, M.D. University of Michigan, Ann Arbor, 1873, died suddenly, August 12, at his home in Atchison, Kas., from angina pectoris, aged 54.

Alexander L. Prevost, M.D. Cooper Medical College, San Francisco, 1874, died at his home in Seattle, Wash., August 15, after an illness of a year, aged 53.

Emery G. Hooker, M.D. University of Michigan, Ann Arbor, 1864, died at his home in Waterbury, Vt., August 14, after a long illness, aged 63.

Hampson S. Clay, M.D. Missouri Medical College, St. Louis, 1872, died suddenly at his home in Augusta, Mo., from heart disease, August 10.

Miscellany.

Consanguineous Marriages.—It is stated that in order to stop the degeneration of European royal families over whom he has jurisdiction the Pope will hereafter grant no more dispensations for consanguineous marriages.

The Signs of Death.—The signs on which a medical man should rely as furnishing the best evidence of the reality of death, prior to the commencement of putrefactive changes, are: 1. The absence of circulation and respiration. 2. The gradual cooling of the body, the extremities cooling first, and the trunk last. 3. Gradual supervention of rigor mortis. 4. The production of postmortem stains or ecchymoses. The careful observation of these four signs by a medical man will enable him to distinguish a living from a dead body.—*British Medical Journal.*

Societies.

COMING MEETINGS.

Rhode Island Medical Society (quarterly meeting), Sept. 4, 1902.
Wyoming State Medical Society, Cheyenne, Sept. 9-10, 1902.
Medical Society of the State of Pennsylvania, Allentown, Sept. 16-18, 1902.
American Association of Obstetricians and Gynecologists, Washington, D. C., Sept. 16-18, 1902.
Medical Society of the Missouri Valley, Sioux City, Iowa, Sept. 18, 1902.
American Dermatological Association, Boston, Sept. 18-20, 1902.
American Academy of Railway Surgeons, Kansas City, Mo., Oct. 2-3, 1902.
Medical Association of District of Columbia, Washington, Oct. 7, 1902.
Idaho State Medical Society, Moscow, Oct. 9-10, 1902.
Vermont State Medical Society, Burlington, Oct. 9-10, 1902.
Mississippi Valley Medical Association, Kansas City, Mo., Oct. 15, 1902.

American Dermatological Association.—The twenty-sixth annual meeting of this society will be held at Hotel Bellevue, Boston, September 18, 19 and 20, under the presidency of Dr. George T. Jackson, New York City; Dr. Frank H. Montgomery, Chicago, is secretary.

Wayne County (Mich.) Medical Society.—At a meeting of this society, held in Detroit, August 14, the members of the Detroit Medical Society were received as members, and the constitution was revised and amended to conform to the requirements of the state medical society.

Grundy County (Mo.) Medical Society.—The physicians of Grundy County met at Trenton and organized a medical society with Dr. Solomon Stewart, Trenton, president; Dr. Thomas B. Herbert, Galt, vice-president; Dr. David T. Bailey, Trenton, secretary, and Dr. W. H. Winningham, Edinburg, treasurer.

Manistee County (Mich.) Medical Society.—A meeting of physicians was held August 14 in Manistee, and a county society was organized with the following officers: President, Dr. Ellsworth S. Ellis; vice-presidents, Frank M. Rich and Humphrey D. Robinson; secretary, Dr. William K. Branch, and treasurer, Dr. Albert S. Payne, all of Manistee. The society is to be affiliated with the state medical society.

Whiteside County (Ill.) Medical Society.—The physicians of Whiteside County held a meeting in Sterling, August 7, and reorganized the Whiteside County Medical Society, which was disbanded several years ago when the Rock River Valley Medical Association was organized. The following temporary officers were elected: Chairman, Dr. Arthur E. McBride, Sterling, and secretary, Dr. Perry F. Purdue, Lyndon.

Cooper College (San Francisco) Science Club.—The members of the Medico-Chirurgic Society met, August 4, and, after a few preliminary announcements, formally disbanded as an association. Shortly after those present were called to order and the Cooper College Science Club was organized, with the following temporary officers: President, Dr. Henry Gibbons, Jr., and secretary, Dr. Charles F. Griffin. It was decided that the object of the new association should be the encouragement of research in medical history; investigation of scientific subjects generally; the development of a medical library in connection with Cooper College, and bringing about fellowship and pleasant relations between medical men.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.]

Urethritis.

Dr. E. H. Siter, in *Ther. Gazette*, states that in looking over cases recorded, he has noted that nearly every drug in the pharmacopeia has been tried in the treatment of gonorrheal urethritis. The following are some of the more valuable formulæ:

℞.	Hydrarg. chloridi corros.	gr. ¼	015
	Zinci sulph.	gr. x	65
	Acidi borici	ʒi	4
	Tinct. opii	ʒiii	12
	Aq. destil. q. s. ad	ʒvi	180

M. Sig.: Use as an injection three times a day; or:

℞.	Zinci sulph.	gr. viii	50
	Plumbi acet.	gr. xii	75
	Tinct. opii		
	Tinct. catechu, āā	ʒii	8
	Aq. destil. q. s. ad.	ʒiv	120

M. Sig.: Inject five times daily; or:

℞.	Zinci acetatis	gr. ii	12
	Acidi borici	gr. xlviii	3 20
	Ext. opii	gr. xx	1 30
	Glycerini	ʒss	15
	Aq. destil. q. s. ad.	ʒviii	240

M. Sig.: Inject four times daily.

In conjunction with the local treatment it is well to use one of the following for internal medication:

℞.	Tinct. aconiti rad.	gtt. viii	50
	Sodii bicarb.		
	Pot. bromidi, āā	ʒii	8
	Liq. pot. citratis	ʒviii	240

M. Sig.: One tablespoonful in water every two or three hours; or:

℞.	Balsami copaibæ		
	Ext. ergotæ flu., āā	ʒss	15
	Mucilag. acaciæ		
	Aq. destil., āā	ʒiiss	75

M. Sig.: Two teaspoonfuls in water every four hours.

The following prescriptions have been used to a greater extent recently:

℞.	Sodii bicarb.		
	Potass. bicarb., āā	ʒi	4
	Potass. bromidi	ʒii	8

M. Ft. chartulæ No. x. Sig.: One every two hours; or:

℞.	Pulv. acidi borici		
	Potass. bromidi		
	Salol, āā	ʒi	4

M. Ft. capsulæ No. xii. Sig.: One capsule every two hours.

As the discharge diminishes the following is recommended in the form of an injection:

℞.	Acidi carbol.	gtt. iv	25
	Zinci sulph.		
	Pulv. alum, āā	gr. xii	75
	Aquæ destil.	ʒiv	120

M. Sig.: Use as an injection three times daily; or:

℞.	Zinci sulph.	gr. x	65
	Liq. hydrastis (colorless)	ʒss	15
	Plumbi acetat.	gr. xii	75
	Aquæ q. s. ad	ʒvi	240

M. Sig.: Use three times daily.

And for the declining stage:

℞.	Zinci acetatis		
	Acidi tannici, āā	gr. xii	75
	Aq. destil.	ʒiv	120

M. Sig.: Use once at bedtime; or:

℞.	Zinci chloridi	gr. iv	25
	Aq. destil.	ʒiv	120

M. Sig.: Inject twice daily.

Cocain for Gastric Pain in Ulcer of the Stomach.

Dieulafoy, in an abstract in *Amer. Med.*, reports a case of gastric ulcer, with excessive pain and absolute intolerance for foods, which he treated by the administration of one teaspoonful of the following solution every hour, with a tablespoonful of iced milk.

R.	Morph. hydrochlor.	gr. 1/6	01
	Cocainæ hydrochlor.	gr. ss	03
	Aquæ calcis	℥iii	90

M. Sig.: One teaspoonful every hour.

An icebag was also placed on the epigastrium. The following day the pain was less severe. Two tablespoonfuls of iced milk were then given every hour, and the quantity increased gradually without producing vomiting, until the patient was able to take from two to three ounces of milk every hour when combined with the foregoing solution. At the end of fifteen days the pains had nearly ceased and the patient was able to take from forty to fifty ounces of milk daily without vomiting.

Chronic Dyspepsia with Deficient Gastric Secretion.

Yeo., in *Clin. Ther.*, recommends the following in the treatment of chronic dyspepsia with deficient gastric secretion:

R.	Acidi nitro-hydrochlor. dil.	℥vi	24
	Liquoris strych.	℥iss	6
	Tinct. aurantii		
	Tinct. calumbæ, āā	℥i	30
	Infusi gentianæ, q. s. ad	℥x	300

M. Fiat mistura. Sig.: A tablespoonful to be taken in half a glass of water after meals three times a day.

Orthoform as a Local Anesthetic in Laryngeal Tuberculosis.

The following combination containing orthoform is recommended by Freudenthal in *Ther. Gazette*:

R.	Menthol	gr. xv-lxxv	1-5
	Ol. amygd. dulcis	℥i	30
	Vitelli ovorum	℥vi	25
	Orthoformi	℥iii	12
	Aq. destil. q. s. ad	℥iii	90

M. Ft. emulsio. Sig.: Apply locally by means of a brush or laryngeal spray.

According to Sendziak, anesthesia produced and the relief of pain last usually a couple of hours, and at times as long as twenty-four hours. The orthoform also produces a favorable action on the tuberculous lesions themselves so that he regards the drug as a very valuable acquisition to the local therapy of laryngeal tuberculosis.

The following combination is recommended by McCall:

R.	Orthoformi	℥ii	8
	Resorcin	℥iv	16

M. Sig.: Apply locally every second day.

The foregoing, he states, has given him excellent results in cases with ulceration and granulations.

In flat superficial ulcerations, such as occur in the epiglottis, orthoform, combined as follows, is preferable:

R.	Orthoformi	℥ii	8
	Bismuthi subnit.	℥iv	16

M. Sig.: Use locally by means of insufflation or in the form of an emulsion.

Iodoform in Pulmonary Tuberculosis.

S. S. Cohen, in *Amer. Med.*, states that iodoform ranks as one among the limited number of drugs which have proved valuable in the treatment of tuberculosis. No other iodin compound, according to the writer, has yet been brought forward which takes its place. Its chief value, he states, is in cases presenting signs of infiltration without softening; but if limited softening be present in one portion of the lung, the drug is of service in combating the extension of infiltration elsewhere. After extensive softening and cavity formation have occurred, its use should give way to that of the creosote group of drugs. To be beneficial in the highest degree iodoform should be given in gradually-increasing doses over a long period. To begin with, one-half a grain or less may be given thrice daily after meals and very gradually increased to the point of tolerance. In the course of two or three months a daily dose of nine or ten grains will have been reached, which may then be pushed more rapidly until fifteen grains daily are given. A good way to administer it is in capsule form (three to five grains) mixed with balsam of Peru as an excipient. If necessary a digestive agent may be added or a dose of essence of pepsin may be given an hour later. If deemed advisable, arsenic iodid may be combined with the iodoform, they being chemically compatible and therapeutically synergistic. No one, according to the author, who has persisted in its continued use will forsake it for any of the transient fads of the day.

Bronchial Asthma.

Yeo states, in old cases of bronchitic asthma, that it is better to combine a small dose of the extract of stramonium with iodid of potassium as follows:

R.	Pot. iodidi	gr. v-xv	30-1.
	Ext. stramonii	gr. 1/6-1/3	01-02
	Spts. chloroformi	m. xx	1 30
	Spts. ammon. arom.	m. xx	1 30
	Aquæ q. s. ad	℥iss	45

M. Ft. haustus. Sig.: The draught may be taken at bedtime or more frequently, according to the requirements of the case.

The stramonium sometimes produces dryness of the throat and disturbances of vision which worry some patients, and for these reasons it is best given at night.

Erysipelas.

In a majority of the cases, according to N. S. Davis in "Sys. of Phys. Ther.," the malady is mild, but the ability to digest food is lessened. In such cases the diet should consist of liquid and soft foods, given in moderate quantities from four to six times daily. When the disease is accompanied by high temperature, delirium or stupor, dry, parched lips or tongue, the food must be altogether liquid. It should consist of broths, gruels, milk and sometimes, especially if the heart beats feebly, of coffee. In cases where the cervical glands are involved and swallowing becomes difficult it becomes necessary to give nutritive enemata. Water is especially indicated in this disease to dilute the noxious matters, and aid in eliminating from the kidneys. When liquids can not be taken in sufficient quantity by the mouth, the therapeutic saline solution should be given by the rectum or hypodermically. Albuminuria and nephritis, which are frequent complications of erysipelas, can be prevented or mitigated by maintaining good renal elimination by the free administration of milk and water. During convalescence the same care must be exercised as in most acute fevers.

Medicolegal.

Physical Violence Not Necessary to Extreme Cruelty.—The Supreme Court of Nebraska says, in the case of Ellison vs. Ellison, that it was formerly thought that to constitute extreme cruelty, such as would authorize the granting of divorce, physical violence was necessary; but the modern and better considered cases repudiate that doctrine as taking too low and sensual a view of the marriage relation. Wherefore, it is now very generally held, as this court here holds, that any unjustifiable conduct, on the part of either the husband or the wife, which so grievously wounds the mental feelings of the other, or so utterly destroys the peace of mind of the other as to seriously impair the bodily health and endanger the life of the other, or such as utterly destroys the legitimate ends and objects of matrimony, constitutes "extreme cruelty" under the statutes, although no physical or personal violence may be inflicted, or even threatened.

Wife Liable for Medical Attendance on Husband.—The Supreme Court of Nebraska holds, in the case of Leake vs. Lucas, that when a husband is actually a part of the family, living with it as such, and is temporarily helpless and incapacitated by illness, his maintenance and support, including necessary medical attendance, come fairly within the rule of the statute of that state which makes the wife liable as surety for necessaries furnished the family. It further holds that, in such case, where the husband and family, including the wife, remove to a sister state, and no judgment can be obtained against him in Nebraska, the obtaining of a judgment against

him in the courts where he resides, causing an execution to issue thereon, and having it returned unsatisfied, is a sufficient compliance with the provisions of the statute to sustain an action against the wife to recover for such medical attendance. In the commissioners' opinion it was stated that this was the first time that this question of the wife's liability had been before them; that they found but little authority upon it elsewhere, and that they did not intend to establish a rule of law by which they should be conclusively bound in such cases hereafter, for every decision on this question must necessarily be largely governed by the facts existing in the particular case in which it is rendered, but that it would seem that the medical attendance necessary to cure the husband of the wife sued of his illness, and thus place him in a position to labor and support the family, herself included, was a necessary furnished for its benefit.

Requirements for Commitment to Insane Hospital.—The Supreme Judicial Court of Maine holds that a nonsuit was rightly ordered in the case of the Inhabitants of Kittery vs. Dixon, an action brought to recover of a husband expenses paid by the town for the support of his insane wife in the insane hospital. It holds that, in the absence of any agreement on his part, or any agency in her commitment, he could only be liable to the town, which had paid the bill at the hospital, where the officers of the town had followed the statute in making the commitment. The statute of that state requires that "the evidence and certificate of at least two respectable physicians, based upon due inquiry and personal examination of the person to whom insanity is imputed," must be had. The court holds that a certificate of the physicians is not enough; that they must be examined as witnesses by the municipal officers, and testify from actual examination of the patient. Where there is no evidence that any physician gave evidence before the municipal officers, and their certificate does not state that they had made "due inquiry and personal examination of the person," the statute requirement is not complied with, and no action can be maintained. For aught that appeared in this case, the physicians might have given their certificate upon hearsay information, and have never seen the patient. In a matter as important as the determination that a person is insane, and depriving such person of his or her liberty, all the investigation and evidence required by the statute, the court declares, should be had, before a commitment can legally be ordered, and the record should show it affirmatively. It did not so appear here, and the commitment, therefore, was unauthorized.

Enforceable Contract for Compensation.—In the case of Doyle vs. Edwards, brought by a physician against an administrator to recover for professional services, the physician alleging that he informed the patient that his charge for the performance of an operation would be from $200 to $400 and that the patient then directed him to proceed with the operation, the Supreme Court of South Dakota holds that the contract as alleged was not too vague and indefinite to base a cause of action on, but was a binding and valid contract for the sum of $200 in any event, and the value of the services, up to $400, on proof of such value. Furthermore, the Supreme Court holds that no error was committed in excluding certain evidence offered by the administrator tending to prove the value of the physician's services. It says that the latter having proceeded on the cause of action alleging a special contract, he had offered no evidence as to the value of his services; and the administrator, or party sued, therefore had no right to introduce evidence on that subject, as the value of the services was not in issue, the only material issue being, did the patient make the contract alleged in the complaint? Nor does the Supreme Court consider that there was any error in excluding the bill for services which the physician presented to the administrator. This made no mention of the contract, and was offered on the part of the administrator, the claim being made that it tended to prove that there was no special contract, because none was mentioned in it. The court pronounces this claim untenable. In its opinion, it says, the exhibit had no tendency to prove or disprove the making of a contract, and it was therefore irrelevant and immaterial, and was properly excluded.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures and single case reports are omitted unless of exceptional general interest.

American Medicine (Philadelphia), August 16.

1 *The Influence of the Roentgen Rays Upon the Different Varieties of Sarcoma. William B. Coley.
2 *Remarks on Arthrodesis of the Ankle for Infantile Paralysis. John Dane.
3 *Recurrent Vomiting. Charles W. Larned.
4 Filtration of Stomach Contents: Changes in Chyme Due to Delay in Examination. A. L. Benedict.
5 *Postmortem Observations on the Appendix. George Boody.
6 Remarks on the Hematology of Rheumatism. A. M. Davis.
7 The Physician's Obligation to Secrecy. William C. Tait.
8 The Seventh Conference of the International Red Cross. Nicholas Senn.

Medical News (N. Y.), August 16.

9 *Chronic Joint Disease in Children. Henry L. Taylor.
10 *A Study of Gastrorrhagia, with Special Consideration of Hemorrhage Due to Ulcerative Processes and Their Surgical Treatment; Report of Cases. Henry M. Joy.
11 A Case of Isolated Neuritis Complicating Typhoid Fever. Charles J. Aldrich.
12 Pathology of Empyema of the Antrum of Highmore. Heber N. Hoople.
13 *The Misuse of Glasses. F. C. Hotz.
14 The Etiology of Typhoid Fever. Wm. Egbert Robertson.

Philadelphia Medical Journal, August 16.

15 *Physiognomy. W. Arbuthnot Lane.
16 *Malarial Fever Mistaken and Treated for Thermic Fever. I. Valentine Levi and Jos. M. Asher.
17 *The Infectious Origin of Purpura Hemorrhagica. A. W. Schram and W. H. Rubovits.
18 *Indications that Our Methods of Fumigation Are Faulty. G. E. Pfahler.
19 Papilloma of the Larynx. John S. Miller.
20 *The Treatment of Acute Uncomplicated Gonorrhea. Hugh Wilkinson.

New York Medical Journal, August 16.

21 My Summer in Wood's Hole. Beaman Douglass.
22 *Tenotomy and Myotomy, with Reports of Eight Illustrative Cases. Prescott Le Breton.
23 Active Movements in the Chronic Stage of Paralysis. E. H. Arnold.
24 *On the Remittent Limp in the First Apparent Stage of Hip-Joint Disease, with Remarks on the Early Diagnosis of the Disease. Newton M. Shaffer.
25 Diagnosis in Abdominal Lesions. (Concluded.) Thomas H. Manley.
26 Consideration of the Aortic Aneurism. James D. Morgan.

Medical Record (N. Y.), August 16.

27 *Pelvic Deformity in New York. James C. Edgar.
28 *Some Chronic Pathologic Processes Seated in the Deep Urethral Region Involving the Male Sexual Function and Nervous System. J. M. Thompson.
29 The Mysteries of Life and Mind. John P. Huber.
30 Hypertrophic Rhinitis and Its Sequelæ. F. M. Hayes.
31 The Mosquito on Board of Vessels at Quarantined Ports as a Factor in the Transmission of Yellow Fever. Edmond Souchon.

Boston Medical and Surgical Journal, August 14.

32 *The Diagnosis of Hip Disease; an Analysis of Ninety-five Cases. Robert W. Lovett.
33 *A Consideration of Uremia. William H. Robey, Jr.
34 Demonstration of a Model of the Thoracic and Abdominal Viscera Prepared from a Human Subject Hardened in Formalin. John Warren.
35 A Case of Possible Fatal Morphin Poisoning: A Difficult Diagnosis. F. A. Harris.

Cincinnati Lancet-Clinic, August 16.

36 *The X-Ray in Cancer of the Uterus. E. Stuver.
37 *The Non-Contagiousness of Tuberculosis. J. F. Baldwin.
38 Summer Diarrheas of Children and Their Treatment. M. A. Auerbach.

St. Louis Medical Review, August 16.

39 Report on the Progress of Laryngology and Rhinology. M. A. Goldstein.

American Practitioner and News (Louisville), July 15.

40 Quinsy. Samuel G. Dabney.
41 Treatment of Diphtheria. J. W. Pearce.
42 A Misleading Gunshot Wound of the Brain, Caused by a Split Bullet; a Contra-coup Fracture of Skull. J. K. W. Piper.

Virginia Medical Semi-Monthly (Richmond), July 25.

43 *What Can Be Done to Regulate the Number of Young Men Studying Medicine? R. S. Martin.
44 *A New Operation for the Correction of the Deformity Known as Saddle-back Nose. Joseph A. White.
45 Cursory Review of the History of the Insane in North America, and of the American Medico-psychological Association. Robert J. Preston.
46 Some Points in the Pathology of and Value of Iron in the Treatment of Anemia and Chlorosis. George M. Norton.

Medical Age (Detroit, Mich.), August 10.

47 The Revival of the Use of Static Electricity. C. R. Wilson.
48 Pseudo-arthrosis of the Clavicle Following Fractures. Carcinoma Involving the Lower Segment of the Rectum. N. Senn.
49 Shall Patients Be Informed of the Sociological Dangers of Syphilis and Gonorrhea? C. C. Mapes.

Medical Fortnightly (St. Louis), August 11.

50 What Is the Obstetrician's Duty? Florence Patrick.
51 Fevers of the Puerperal State; from the Surgeon's Standpoint. Emory Lanphear.
52 Angio-neurotic Edema. F. Savary Pearce.

Pediatrics (N. Y.), August 1.

53 Modern Methods Employed in the Prevention and Treatment of Trachoma and Other Forms of Contagious Ophthalmia. Karl Koller.
54 The Laws of the State of New York Relating to Contagious Diseases of the Eye, the Results of Their Enactment and the Desirability of Further Legislation. Frank Van Fleet.

American Gynecology (N. Y.), July.

55 *Ovarian Pregnancy, with Report of a Case. John F. Thompson.
56 *Retrodisplacements of the Uterus: Non-operative Treatment. F. H. Davenport.
57 *The Alexander Operation. Clement Cleveland.
58 *Operations on the Utero-Sacral Ligaments in the Treatment of Retroversion of the Uterus. J. Wesley Bovee.
59 *A Consideration of Ovarian Fibromata Based on a Study of Two Recent Cases and Eighty-two Collected from the Literature. Reuben Peterson.
60 Report of Three Rare Operations on the Urinary Organs: 1. Hypernephroma of the Kidney; Nephrectomy. 2. Papillary Carcinoma of the Pelvis of the Kidney; Nephrectomy. 3. Stone in the Left Ureter; Extraperitoneal Operation; Removal of the Stone. Charles P. Noble. With Pathological Notes. W. Wayne Babcock.

Cleveland Medical Journal, July.

61 Emphysematous Gangrene. Martin Stamm.
62 Intravenous Injections of Bichlorid of Mercury and Other Salts. Nicola Cerri.
63 Substitute Infant Feeding with Special Consideration of Modified Cow's Milk. Carlyle Pope.
64 A Simple Method for the Removal of External Hemorrhoids Under Local Anesthesia. Thomas C. Martin.
65 Treatment of Acute Rheumatism. John B. McGee.

Annals of Surgery (Philadelphia), August.

66 *Intestinal Obstruction Due to Gallstones. H. L. Barnard.
67 *Angiotripsy as a Substitute for the Ligature in Routine Work of General Surgery. Oscar J. Mayer.
68 *Morrison's Operation for Ascites due to Laennec's Cirrhosis. F. Tilden Brown.
69 *Congenital Dislocation of Hips. Edward H. Ochsner.
70 *On the Use of the Abdominal Route for Approaching Rectal Tumors. Robert Abbe.
71 A Case of Perforating Gunshot Wound of the Stomach and Liver with Posterior Through Drainage and Recovery. Roswell Park.
72 Complications Following Gastroenterostomy. William J. Mayo.
73 Report of Five Cases of Laparotomy for Intestinal Obstruction. August Schachner.
74 On a Case of Splenectomy for Leukemic Enlargement. Theodore A. McGraw.

Indiana Medical Journal (Indianapolis), August.

75 Enteroptosis. H. O. Pantzer.
76 Intubation of Trachea with Ordinary Gum Catheter. R. C. N. Cook.
77 A Case of Dislocation of the Malar Bone Without Fracture. John T. McShane.
78 Photo-Chemistry in the Treatment of Disease. A. E. Sterne.
79 The Early Treatment of Tuberculosis—Drug Treatment. Theodore Potter.
80 A Case of Tubercular Meningitis. H. A. Giltner.

Western Medical Review (Lincoln, Neb.), August 15.

81 *Some Internal Injuries of the Knee Joint. M. L. Harris.
82 *Intestinal Obstruction from Meckel's Diverticulum. Albert E. Halstead.
83 *New Method of Anchoring the Kidney—A Preliminary Report. Byron B. Davis.
84 *Serum-therapy with Especial Reference to Diphtheria. W. H. Christie.
85 The *X*-ray Treatment of Cancer. John P. Lord.

The Post-Graduate (N. Y.), August.

86 Some Observations on the Subject of Cataract. Frank Van Fleet.
87 Examination of the Sputum. Hermann Lenhartz.
88 The Germ Theory of Disease Examined. Joseph Clements.

The Laryngoscope (St. Louis), August.

89 *Some Clinical Features Regarding Hay Fever and Its Rational Treatment. G. B. Hope.
90 *An Operation for the Correction of Deflections of the Nasal Septum. E. B. Gleason.
91 *A Simple Method of Correcting Certain Deformities of the Nasal Septum. George Fetterolf.
92 *Rubber Splints in the Treatment of Septal Curvature. J. Price Brown.
93 Paraffin Injections for Nasal and Other Facial Deformities, with Exhibition of a New Instrument. Francis J. Quinlan.
94 *The Local Application of Heroin Hydrochlorid. Albert Rosenberg.

Toledo Medical and Surgical Reporter, August.

95 Complications and Use of Instruments During Labor. H. E. Smead.
96 A Contribution to the Therapeutics of Anemic Conditions. Herman Metall.
97 Rhinitic Gout (Hay Fever). E. P. Hatch.
98 Care of the Pregnant Woman. Anna G. Smith.
99 Kansas State Reformatory Report. Darbay Andrus.

Denver Medical Times, August.

100 The Therapeutic Use of the *X*-ray. G. H. Stover.
101 Report of Two Unusual Cases of Multiple Neuritis in Children. Edward Delehanty.
102 A Few Practical Suggestions. D. W. Towns.
103 *Briefs on the Surgery of the Genito-urinary Organs. G. Frank Lydston.
104 A Case of Rhinoplasty. D. N. Mayo.
105 Report of a Case (Postmortem) of Heart on the Right Side (Congenital). Henry Dalton.

Carolina Medical Journal (Charlotte), July.

106 *The Radical Cure of Hydrocele. Hubert A. Royster.
107 Retention of Urine. A. J. Crowell.
108 The Surgical Treatment of Chronic Ulcers. James M. Parrott.
109 The Mattison Method in Morphinism. W. P. Ivey.
110 The Doctor in Literature. Eug. B. Glenn.
111 Management of Smallpox Outbreak. P. J. Macon.

Annals of Gynecology and Pediatry (Boston), August.

112 The Pubescent and Adolescent Periods of Girlhood. William E. Fitch.
113 Intestinal Obstruction. William T. Smith.
114 A Plea for the More Accurate Diagnosis of Cholelithiasis. J. H. Stealy.
115 The Management of and Preparation for the First Stage of Labor. William W. Pennell.
116 The Unsurgical Features of Vaginal Hysterectomy. S. C. Stemmel.

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1. **Sarcoma and the Roentgen Rays.**—Coley reports a number of cases. He believes the action of the *x*-rays is an evidence in favor of the micro-parasitic origin of these tumors. While the present series of cases is small and the time of observation short, he believes he is warranted in stating: 1. That the results in the cases thus far treated prove that the Röntgen ray has a remarkable inhibitory action upon the growth of all forms of malignant disease and that this is especially true of sarcoma. 2. That this action in many cases of even far-advanced and inoperable malignant disease may result in the total disappearance of the tumors, often without any breaking down of the tissues, the new-growth being apparently absorbed. 3. Whether the patients have been cured, or the disease has been merely arrested, to reappear at some future date, is a question that time alone can decide. 4. Recent observations and experiments upon the various forms of carcinoma and sarcoma prove that an agent supposed to be of value only in a very limited class of superficial epitheliomas promises to be of as great or even greater value in practically every variety of cancer. 5. While at present there is little evidence to show that deep-seated tumors in the abdomen and pelvis can be cured or benefited by the Röntgen ray, there is still some reason to hope that with improved apparatus or with greater knowledge and skill in using the apparatus that we now have, even these cases may be benefited. 6. The Röntgen ray has a very marked influence upon the pain of nearly all types of malignant tumors, causing entire relief in many cases.

2. **Infantile Paralysis.**—Dane holds that arthrodesis of the ankle at an early age is an advisable procedure in infantile paralysis to obviate the necessity of the later use of supporting apparatus. The objections to it are reviewed. He thinks that merely cartilaginous union is not liable to occur often enough to make it a valid objection and the theory of injury to a growing epiphysis is more theoretic than practical.

3. **Recurrent Vomiting.**—Two cases are reported by Larned in children and the subject generally with its literature is discussed. He believes that it is too little recognized and is more common than generally supposed. The diagnosis is not difficult if one recognizes the existence of such a disease. The theories of its origin are noticed; those of irritation, of a neurosis of toxic origin and Rachford's view that it is due to the presence of certain xanthin substances in the body. His observations have led him to believe that the condition is certainly due to some toxic substance, the nature and origin of which is yet obscure. The differential points between acute meningitis, tuberculous meningitis, intestinal obstruction, acute indigestion and nephritis are reviewed. The lack of previous history of middle-ear disease and of prodromal symptoms lead him to exclude meningitis and the lack of abdominal pain, etc., intestinal obstruction. The character of the vomiting will also distinguish the disease from intestinal obstruction. Acute indigestion has its characteristic symptoms, the vomiting showing undigested food, the tendency to diarrhea, and relief of the attacks by vomiting, while examination of the urine will

serve to exclude nephritis. The mortality was considered slight until Marcy published his two fatal cases. Up to the present time nothing has been found that will cut short an attack, though certain measures will alleviate it. All food and drugs by the mouth should be stopped and medication and feeding be entirely by the skin and rectum. In the majority of cases it is not necessary to resort to hypodermic medication, as the thirst seems fairly well controlled by the retained injections of salt solution. Tincture of opium given in this way is about as effective as morphin hypodermically and the urine seems favorably affected by this method. Flushing out the lower bowel once daily with a copious high injection of normal salt solution seems to be of some benefit. With the subsidence of vomiting a calomel purge is indicated. Between the attacks the child should lead an outdoor life, avoid over-fatigue or excitement and have the bowels carefully regulated and should drink a good deal of water.

5. **The Appendix.**—The postmortem findings in 528 autopsies of the insane are reported by Boody. He finds a considerable number of abnormal conditions, it being in a normal position in only about 51 per cent. His conclusions are as follows; 1. These statistics perhaps vary somewhat from those of healthy people. A parallel series of cases might show very few of the more common malpositions of the appendix herein described, and none of those far removed from the normal. Even parallel series from among those sick, and with mental and nervous complications, might show far fewer abnormalities. 2. In view of the fact that in this series the appendix was found far removed from its normal situation a number of times, that it was found in nearly every region of the abdominal cavity, the diagnostician would do well to bear in mind that a diseased appendix might be found far removed from the right iliac region.

9. **Chronic Joint Disease in Children.**—According to Taylor, chronic joint disease in children in nine cases out of ten and probably oftener, means tuberculosis. Nevertheless we meet with a certain number of other forms. Blennorrhagic infection in children is seldom observed and the small number of syphilitic cases is remarked upon. The other conditions are rheumatism, osteomyelitis and suppurative types, but these are few. The author sees but little rheumatic joint disease in children and warns against a hypothetical diagnosis of rheumatism. As to the distribution of tuberculous disease among the various joints, over 13,000 cases show more than two-fifths vertebral, a little less than two-fifths in the hip, and of the remaining one-fifth, one-half was claimed by the knee. The larger joints are, therefore, the ones of preference, and the lower extremities rather than the upper. He calls attention to the insidiousness of onset of tuberculous disease, frequently due to slight trauma, or this may be lacking and some previous infection like whooping cough, scarlet fever or other exhausting disease may be the antecedent. The family history may be good and the frequent absence of pain in the beginning and throughout the disease is notable. The most characteristic symptom is stiffness or limitation of motion due to spasmodic muscular contraction. The symptoms of the different types are mentioned. He notices particularly that gastralgia is a common symptom which should suggest spinal examination, and he gives a list of conditions for which Pott's disease of the spine had been mistaken in the diagnosis. The traditional knee pain in hip disease is also remarked on; it may occur in various other conditions. What we should try to do in the diagnosis of this disorder is to demonstrate and define the limitations of motion and the involuntary spasmodic muscular contraction without pain to the patient. The limitation of hyperextension at the hip is the earliest and most delicate test. Taylor remarks on the antagonism between tuberculosis and rheumatism, and thinks this applies to tuberculous disease of the joints. There also appears to be an antagonism between rickets and joint tuberculosis. In conclusion he insists on the importance of early diagnosis and treatment in these cases.

10. **Gastrorrhagia.**—The various causes of gastrorrhagia and the diagnostic points are noted by Joy, who concludes that it has a greater mortality than is generally supposed. There are two conditions indicating surgical intervention, namely, profuse and repeated hemorrhages. He calls attention to the fact that the so-called round ulcer is not the one that causes the gravest symptoms. Some mere abrasion of the mucous membrane may be the cause of as serious hemorrhage as a deep ulcer, as is shown in a case here reported. As for treatment, the best method in his opinion is a submucous ligation by the purse-string ligature as in case of multiple erosion. The fact he specially calls attention to in the cases reported are that they were cases of multiple erosion, a condition usually thought to be due to mechanical congestion, and that without any evidence of the causes producing such. Here are two cases with distinct localized tenderness, pain radiating to a localized point in the back, and gastric hemorrhage, and yet with no evidence of typical gastric ulcer. He thinks they also demonstrate the fact that in this particular class of cases the use of the purse-string is the only practical way of controlling the hemorrhage.

13. **Misuse of Glasses.**—Hotz reports cases which show the misuse of glasses, the uselessness of prescribing lenses for every case of ametropia. He does not object to weak lenses, but objects to the indiscriminate prescribing of them.

15. **Physiognomy.**—The points especially made by Lane are the influence and effects of defective development of the nasopharynx and respiratory functions on the face and the influence of the tongue on the development of the jaws. All children are born with normal nasopharynx and facial bones. The morbid changes usually appear about the third year, frequently after some infectious disease. He describes the general physical symptoms at length, not only the effects of nutrition on the skin, etc., but more particularly those modifications of the face that are expressed in the term physiognomy. The hairy scalp encroaches upon the forehead, the face is narrowed and cheeks are flattened. If the nose is prominent, it becomes flattened laterally and vertically. The anterior nares form elongated, narrow slits which show no appreciable alteration in shape during the movements of expiration. The nostrils are apt to look more forward than normally, the upper lip is short, the mouth is kept open and the lip covers only a portion of the upper teeth, which are freely exposed, though later in adult life, by the exercise of the will, the individual may learn to keep the mouth shut. The chin recedes, and in a moderate degree some of the changes may render the face in a way attractive, giving the ideal of the novelist or poet of the refined and intellectual face, but if these changes are prominent they destroy the beauty of the features. The alveolar arch is compressed laterally, the palate high, the tonsils frequently large, the teeth poorly developed and fit imperfectly on their fellows and the tongue is small. These facial deformities are connected with low vitality, defective resisting power to disease, the presence of scrofula or enlarged cervical glands, lack of thoracic respiration, decay of teeth and other degenerative symptoms. With boys the active out-door life often cures to a certain degree these defects, but the girls have to continue in the abnormal condition, and the corset maker and dressmaker only aggravate the condition. Later in life, pregnancy, by exciting for a period efficient thoracic respiration, may permanently restore the health, but in many cases the effect is damaging. The condition is apt to be complicated with a loose abdominal wall and enteroptosis, impairing the comfort and happiness of the individual. The tongue is an important factor in the development of the lower jaw. The recognition of this fact is of value as improvement can be secured by encouraging mastication and exercise of the tongue from early infancy. The jaw and tongue can be developed together. He says a good word for the American chewing gum, which he thinks effects the same purpose and may give character to a face that would otherwise suggest indecision and feebleness. The different defects of the jaw, the underhung, open and edge-to-edge bite and the question to what extent the size of the tongue and jaw can be modified by feeding with hard and soft foods is mentioned in relation to the treatment of these conditions. The paper is interesting and suggestive.

16. **Malarial and Thermic Fever.**—Levi and Asher report cases where malaria was mistaken for thermic fever, occurring in a hot spell and brought in with genuine cases. That the two conditions have some common characteristics is shown in the pernicious types of malaria, and they quote from Tyson passages illustrative of the striking similarity. Of course, the blood examination would be conclusive, but there are cases of malarial fever complicated with sunstroke, and in these cases the value of the knowledge that malaria is present is self-evident.

17. **Purpura Hemorrhagica.**—A case of purpura hemorrhagica with bacterial findings is reported by Schram and Rubovits with a brief discussion of the literature of purpura.

18. **Fumigation.**—Pfahler criticises the methods of fumigation at present in use, finding that they are inefficient. He gives the results of experiments made with formaldehyd in a closed room with subsequent culture examinations. Sulphur was also employed with the same results. The cultures all grew and the results indicated that the methods depended upon were not a success. They raise doubts, he says, as to the value of attaching a fumigator to the key-hole of a large factory in which a case of smallpox has developed and generating gas for half an hour, the windows and other openings not being sealed. He thinks a satisfactory method of application of formaldehyd will probably mean an apparatus capable of generating the gas ten times as fast as at present or in a more concentrated form.

20. **Gonorrhea.**—The treatment of this condition is described by Wilkinson, as first rest, which is of paramount importance and which with a bread and milk diet would cause the disease in most cases to disappear rapidly. It is generally impossible, however, to insure complete inactivity and other measures must be employed. The diet is next in importance. It should be restricted to milk and bread for a week at least. Meats, pastry and heavy foods should be abstained from until acute symptoms are past. Hot and cold drinks should not be used nor tea, coffee and alcohol, especially the latter. The points in the drug treatment are to keep the bowels open, get the urine in an antiseptic, unirritating condition, and to increase its flow so as to make it dilute and efficient as an irrigating fluid. Nothing is better to increase the quantity of urine and dilute it than ample water drinking, and this should be insisted upon. He recommends the use of ordinary belladonna, strychnia, ipecac and aloin pills every second night for the first week at least. Urotropin is the best modern urinary antiseptic, but its expense may be a drawback in some cases. It should be given ordinarily in 5 to 7 gr. doses four times daily after meals and at bedtime. The contents of the capsule should be emptied into half a glass of water and the whole taken. A substitute for it would be a powder of 5 gr. each of boric acid and sodium bicarbonate and 2 gr. of powdered cubebs taken on the tongue and washed down with a copious draught of water. These two he has generally found efficient. He does not favor the use of the injection method. Hot water applications several times, at least twice daily, are advised, with careful drying of the parts with absorbent cotton and then dusting with a boric acid powder. He also advises against applications to keep in the discharge, damming it back. A piece of cloth that can be discarded or washed, loosely applied, is best. In conclusion he cautions against the dangers of the syringe, which he thinks has been the cause of many cases of orchitis and other disastrous results.

22. **Tenotomy and Myotomy.**—Cases of spastic paraplegia, spinal and cerebral disease with contractures, tuberculous osteitis with flexion deformities and talipes are reported by Le Breton as benefited by the proper use of tenotomy and myotomy. He discusses the subject generally at length, noticing the literature and indications for the operation as well as its technic.

24. **Hip-Joint Disease.**—Shaffer calls attention to the remittent character of symptoms in hip-joint disease which he has observed. He finds that the muscular protection of the joint did not wholly disappear with the limp in these cases, and he thinks it is important that people should know that a slight limp that may subsequently disappear may yet be a symptom of hip-joint disease. He calls attention as a matter of history and priority to his use of the term "reflex spasm" in describing the condition now so well known to us all.

27. **Pelvic Deformity.**—The following are Edgar's conclusions from a study of 1200 cases of confinements occurring in the service of the Mothers' and Babies' Hospital, New York: "1. Of our 1200 consecutive cases measured 499, or 41.58 per cent., were American-born women; 215, or 17.91 per cent., Irish; 130, or 10.83 per cent., Russian; 105, or 8.75 per cent., German; 30, or 2.50 per cent., black, etc. 2. Contracted pelves occurred in forty-four cases, once in twenty-seven cases, or in 3.66 per cent. Generally contracted pelves occurred in thirty cases, once in forty cases, or 2.50 per cent. Flattened pelves occurred in fourteen cases, once in 85.71 cases, or 1.16 per cent. 3. Twenty, or 45.45 per cent., of our cases of pelvic contraction were among American-born women, and deformity occurred once in 24.95 of these cases, or in 4 per cent. 4. Three, or 6.81 per cent., of the contracted pelves were among black women, and deformity occurred once in ten of these cases, or in 10 per cent. 5. Our material gives a frequency of contracted pelves (1200 cases, 3.66 per cent.) midway between the conclusions of Williams (Baltimore, 1000 cases, 13.1 per cent.); Crossen (St. Louis, 800 cases, 7 per cent.); Reynolds (Boston, 2127 cases, 1.13 per cent.) and Flint (New York, 10,223 cases, 1.42 per cent.). 6. Our statistics, 3.66 per cent. of contractions in 1200 cases, differ from those of England (F. Barnes of London, 38,065 cases, 0.5 per cent.); of France, 5 to 21.11 per cent.; Germany, 9 to 9 per cent.; Switzerland, 8 to 16 per cent.; Austria-Hungary, 2.44 to 7.8 per cent.; Russia, 1.2 to 5.1 per cent.; Italy, 18.13 per cent.; Holland, 3.51 per cent. 7. Special or irregular forms of pelvic contraction as osteomalacia, obliquely contracted coxalgic, double coxalgic, spondylolisthetic and kyphotic, fractured pelvis, are infrequent in this country. 8. The generally contracted pelvis is the most frequent deformity met with in New York. I found twice as many generally contracted as flattened pelves in my material (30.14). Williams found practically the same condition in Baltimore (79.45). 9. Records kept of private and consultation cases in New York over a period of ten years show a somewhat higher percentage than the results obtained from the 1200 hospital cases, namely, about 5 per cent. for all deformities; the generally contracted pelvis being twice as frequent as the flattened."

28. **Prostatic and Vesical Massage.**—Thompson's article deals with the morbid conditions in the upper male urethra, the prostate and seminal vesicles and their treatment. He calls special attention to the neurasthenic symptoms and their local treatment in these cases, especially by massage.

32. **Hip-Joint Disease.**—From an analysis of 95 cases, Lovett finds that other than tuberculous conditions are not at all infrequent, and remarks that it is obvious that the signs ordinarily taken to be diagnostic of tuberculous hip disease are not characteristic of it, but are often present in cases with rapid recovery, and in other forms of chronic joint disease. Therefore, some diagnostic criterion must be found more accurate than the presence of one or all the signs, muscular, spastic, atrophic, night cries, gluteal wasting and sensitiveness of the joint. Of all the signs given, thickening of the trochanter appears to be the most reliable. The *x*-ray is of great value in the early diagnosis.

33. **Uremia.**—The difficulties of the diagnosis of uremia are illustrated by the cases reported by Robey. He reviews the theories, and thinks apparently more favorably of the toxic theory than of the mechanical one. He thinks if we can only find laboratory methods by which we can recognize in the blood or urine the element or combination of elements that probably appear prior to the onset of the uremia, we might be able to ward off the condition, or in cases of convulsions or coma actually existing, give more intelligent treatment. The prognosis would be better if we were able to intelligently combat a definite toxemia.

36. **X-Ray in Cancer of the Uterus.**—Stuver reports a case of aggravated advanced cancer of the cervix with softening and ulceration of the vaginal walls and rectum, very extensive

discharge and great debility. It was treated by the *x*-ray, a speculum being inserted and the adjoining parts well protected with towels and tinfoil, while the *x*-ray generated by a static machine was focused on the cervix and the application kept up for eight minutes, the tube being ten or twelve inches from the affected parts. At the time of writing, fifteen days after beginning treatment, the duration of the application had been somewhat increased. After the second treatment there was a decided diminution in the amount of discharge, which is not now one-half as much as it was, and the odor is scarcely perceptible. The diseased parts have a cooked appearance and the sloughing has been arrested. The patient has gained in strength so that she can walk around without assistance, and the pain is greatly ameliorated.

37. **Tuberculosis.**—Baldwin remarks against the use of the term contagious in connection with tuberculosis. He has written to the Brompton Hospital for Consumption at London asking for instances of contagion and in reply has obtained no record of any such among the employes. Undoubtedly within recent years precautions have been taken, but certainly not during the first fifty years of this sixty-year-old hospital. He criticises the registration of the state board of health as to the transportation of bodies dying of this disease, as unnecessary and expensive to those who have to meet the expense.

43. **Excess of Medical Students.**—Dr. Martin, secretary Virginia State Board of Medical Examiners, has corresponded with a number of physicians as to the possible remedies for the excess in number of medical students, and the overwhelming balance of opinion is that there should be a raising of the standard of admission to medical colleges, some going so far as to claim that only one with at least a bachelor's degree should be permitted to enter on the study of medicine. What he considers the most practical and rational is to have state regulation of educational qualifications of applicants.

44. **Saddle-Back Nose.**—After first mentioning Gersuny's paraffin method of treating saddle nose, White remarks that it may, if not properly managed, only serve to increase the deformity, and suggests the following operation: The best way, he says, to elevate the osseous structure is to break the dislocated nasal process of the superior maxillary bone from its attachments and loosen the nasal bones by strong forceps, one blade (rubber covered) inside, and one out, thus making the osseous framework of the nose movable with the fingers. It can then be molded into shape and packed up from the inside into a vulcanite mold, which has been made over a nose of good contour, this mold being held in place by straps. It will take at least a month for the parts to adjust themselves. The technic of the operation is described by him as follows: "1. The cuticle and subcutaneous tissues *at the point of depression* are loosened from the septum subcutaneously, so that a probe can be passed from one nostril to the other over the triangular cartilage, which is usually depressed, twisted and driven down over the vomer. Then the inferior lateral cartilage, which is part of the framework of the ala of the nose, is split from without inward and up to its connection with the septum cartilage. This is done on each side, leaving a flap hanging in either nostril attached to the angle, formed by the septum cartilage and the cartilages of the ala. A thread armed with two needles is passed through the lower end of the flap. The needles are then passed up through the gap made between the septum cartilage and the overlying soft parts when these latter were separated, under the skin and over the cartilage, and then through the superior lateral cartilage and skin of the opposite side. By tying the two ends of the thread together over a roll of tape, the flap is pulled up into the gap between the skin and cartilage, and held in place. When the two flaps are tied into position the raw surfaces are brought into apposition, and the flaps completely fill up the gap between the skin and cartilage, and make an elevation where previously there was a depression. In the healing process this slight elevation gradually contracts, so that the profile of the nose becomes practically a straight line."

55. **Ovarian Pregnancy.**—Thompson reports his case of ovarian pregnancy in detail and discusses the literature of the subject to some extent and the objections to the possibility of the condition. The points which in his opinion substantiate the claim of ovarian pregnancy in the case here presented are: "The tube is not concerned in the development of the pregnancy; there is no supernumerary tube; the pregnancy undoubtedly did not occur at or near the fimbriated end of the tube as the sections made from the tube near the fimbriated end show no evidence that that structure has been the seat of pregnancy; the fimbriated end was found at the time of operation to be entirely free from the ovary so that the case is not one of tubo-ovarian pregnancy; the fimbria ovarica in this case is found in what must be considered its normal place, extending from the end of the tube to the outer end of the ovary; the pregnancy has occurred at the extreme inner end of the ovary; there is no evidence to be derived from the examination of sections of ovarian tissue that the fimbria ovarica has passed up over the surface of the ovary; an examination of more than 100 sections from different parts of the wall of the ovisac shows no cells which can be considered as decidual; there is no trace of decidual tissue to be found in any part of the specimen examined."

56. **Retrodisplacements of the Uterus.**—The non-operative treatment of retroflexion of the uterus, says Davenport, has its place and an important one in our practice. "The only method which merits an extended consideration is that by pessary. There are cases which are better treated by pessary than by operation, and there are not a few cases in which operation is the better but in which it is refused and we are forced to use some non-operative measure. For the vast majority of such cases the treatment by pessary is the only one that holds out any prospect of cure. In selected cases the chances of definite cure should be at least 50 per cent., but if we include in our statistics those cases in which we are forced to employ pessaries when our better judgment would select operation, the percentage of cures would not be more than 33 per cent. Cases which refuse operation should not be left untreated, for even if a cure can not be expected from the use of the pessary it will often make the patient comfortable. Care in the selection of a pessary and attention to the after-treatment will aid materially in the success of this method."

57. **The Alexander Operation.**—Cleveland describes in detail the technic and methods of the Alexander operation which he holds is not really difficult if the essential points are kept in mind. The main thing is to reach the external ring gradually without mutilating the tissue—that is with a clean cut from the surface to the ring. The incision is made through the integument of the desired length. After this and only then, is the locating of the ring of importance. It can usually be found by the touch, from the sense of the lesser resistance than the surrounding structures, just above and to the inside of Poupart's ligament. Once found, the location must be kept in mind as the incision is carried downward. In thin women it is usually necessary merely to draw firmly upon the retracting sutures to enable the operator to cut directly through with one or two strokes of the knife to the aponeurosis. When there is a great deal of fat, the operator and his assistant each grasp the bottom of the wound with a tooth forceps and the cut is made between these. This procedure is repeated until the aponeurosis is reached, the exact location being taken before each stroke of the knife. This is the whole secret to the first step of the operation, cutting accurately and rapidly to the aponeurosis of the external oblique. One point that he especially emphasizes is the strengthening of the attachment of the ligament in the canal by including in the first suture the pouch of the peritoneum called the infundibuliform process. It not only strengthens the attachment of the ligament but adds to the support of the uterus by taking in a fold of the peritoneum, though it is a small one, and it more completely fills the inguinal canal and makes an external shortening of both the round and broad ligaments, not, of course, of the whole broad ligament, but that portion of it covering the round ligament near the internal ring. He thinks the danger of including a knuckle of the intestine in the suture is minimal and he also makes use, to some degree, of the

Trendelenburg position, which should ensure against this risk. It is most important to find and isolate the genital branch of the genito-crural nerve and avoid cutting it or including it in the suture. We must be absolutely sure of the suture material and he thinks nowadays the carefully sterilized iron-dyed silk the best. He also believes in the use of rubber gloves in the operation. The advantages of operation as compared with other methods are that it is just as likely to be successful and is free from danger. The wounds are very short, and not prominent; the scar is sometimes hard to find. He does not believe in the vaginal method except in married women who have borne children.

58. **Retroverted Uterus.**—Bovée advocates the operation on the utero-sacral ligaments in the treatment of this condition, giving the history and technic and indications for the various routes of operation. He thinks the extraperitoneal shortening of these ligaments with the adjoining portion of the vaginal wall is practically devoid of danger and frequently indicated. The abdominal route is less frequently required, but should the abdomen be opened for any other purpose, shortening of these ligaments would be very little extra risk to the patient or extra task on the part of the surgeon. It does not have some of the conditions incident to ventrosuspension and ventrofixation that are considered by some as real dangers, and it is supporting Nature's supports to this important organ.

59. **Ovarian Fibromata.**—Two cases are reported by Peterson and other cases in the literature discussed. He finds that fibromata of the ovary occur earlier and in relatively greater numbers during early sexual life than do fibrous growths of the uterus. That while relatively the largest number are found during or just after the menopause, a considerable percentage of cases occur proportionately later in life than is the case with the uterine fibromyomata. Neither meno- or metrorrhagia is a very constant accompaniment of fibroma of the ovary, but is more apt to occur where both ovaries are affected by the disease. The growth may extend over many years before the tumor reaches large proportions or gives rise to marked symptoms, but in a small number of cases it is more rapid, and some cause symptoms within a few months. Pain is present to a greater or less extent in nearly one-half the cases of ovarian fibromata. Freedom from pain means, as a rule, the absence of adhesions of the growth to the surrounding organs. Pain is more frequently met with in tumors of moderate size. Dysuria is a symptom in about 15.6 per cent. of the cases. These growths do not produce any changes in the size of the uterus or otherwise affect its position unless large centrally situated tumors exist, where, in a few cases, retrodisplacements may follow. The uterus is, as a rule, found unconnected with the growth, but it is not always easy to positively diagnose this prior to operation. Ascites is present in about 40 per cent. of cases. The effusion may be large in amount and give rise to distressing symptoms. The largest tumors do not give rise to the greatest amount of fluid. The cause of this is obscure. The peritoneum does not show evidence of inflammation and the ascitic fluid, as a rule, is clear and without much color. Adhesions are commonly the result of operation. In 74 ovariotomies reported were 62 recoveries and 4 deaths, or a mortality of 6 per cent. There were also a Cesarean section and a hysterectomy in addition to the ovariotomy, both of them being fatal. In the majority of cases the pedicle of an ovarian fibroma is made up of the broad ligament and of the Fallopian tube. Twisted pedicle has been noted nine times, or in about 10 per cent. The left ovary was involved in cases where this detail was reported, a little more frequently than the right. The condition of the opposite ovary was not recorded in 36 cases, in 11 of the remaining 38 it was found healthy, and in 14 cases it was reported as normal, in 6 it was atrophied, in 3 it was found enlarged and in 4 it showed cystic disease enough to warrant its removal. The size varied from an adult's head to a hen's egg; the weight from 20 pounds down. Calcification was noted in 13 per cent. A greater or less degree of cystic degeneration existed in 22 of the 84 cases. The growths were described as fibrous in 63, or 75 per cent.; 48 of these were fibromata, 12 pure fibromata and fibroma with colloid infiltration, fibroma with mucoid degeneration, and fibroid with hyalin and myomatous changes one each. Seventeen, or 20 per cent., were found to be fibromyoma, two were called myo-fibromata and there was one each accredited to the myomata and to the myo-fibromata with hyalin degeneration.

66. **Intestinal Obstruction.**—Eight cases of gallstone obstruction are reported by Barnard, who observes that the statements as to its frequency are varied. It appears to be a condition of advanced age and more common in women than in men. A large gallstone usually passes into the duodenum by the process of ulceration after the parts have become united by adhesion, more rarely into the jejunum or transverse colon. The higher up the point of obstruction the larger we may expect the concretion to be. As a rule any gallstone less than one inch in diameter passes spontaneously. The ileocecal valve is one of the common points of obstruction and also the lower portion of the small intestine, which becomes smaller toward its lower extremity. It is not smooth and lacks a powerful muscle wall like the rectum and sigmoid to propel its contents. According to Duplay and Reclus, spasm of the intestine excited by the rough surface of the gallstone is often responsible for the obstruction, as the stone is frequently found lying loosely in the gut; there is no true strangulation of the intestine. Such cases of gallstone lodgment are pure cases of obstruction without interference with the blood-supply of the intestine itself. The gut is not paralyzed throughout as in most other cases of intestinal obstruction. The onset is sudden, pain and collapse are rarely severe until late, constipation is not well marked, the prominent symptom is apt to be vomiting. The mortality seems to be high. As regards treatment, the one thing is to ascertain the existence of organic obstruction and then operate. The most certain test, according to Barnard, appears to be the turpentine enema, one-half to two ounces in sixteen ounces of soap and water. If this is returned on two consecutive occasions without flatus or feces, the obstruction is almost certainly organic, but even this sign, as has been pointed out, is of uncertain value in gallstone intestinal obstruction, as both flatus and liquid feces may be passed during its existence.

67. **Angiotripsy.**—Mayer describes a hemostatic forceps and a pressure forceps capable of giving 1000 lb. pressure as a supplementary instrument, and reports the results of experiments on dogs. He considers that there is some responsibility and danger in using it on so proportionately large a vessel as the femoral in man, and he thinks that a precautionary or supplementary ligature applied after angiotripsy does not lessen the advantages, and it can be of such fineness that complete sterilization would leave no doubt as to perfect asepsis. He thinks this method, however, has a large field of application.

68. **Morrison's Operation.**—After reporting a case and examining the successful ones in the literature, Brown remarks that presuming, of course, that we are dealing with pretty straight cases of ascites due to cirrhosis of the liver, he can summarize his impressions as follows: "1. The more rapid have been the accumulations of ascitic fluid, the greater the reason to provide for long-continued drainage which is to follow the operation, and to expect that very gradual improvement in all symptoms is the most and best which can be hoped for. 2. In these advanced and apparently hopeless cases of rapidly recurring ascitic accumulations, the three things of greatest import appear to be: (*a*) The full appreciation before operation of the necessity and the provision for a constant and thorough aseptic pelvic drainage. (*b*) The general observance of a rational and aseptic operative technic, such as that used in the third case of Mr. Morrison, and which we followed quite closely in our case. In other words, the readiness to forego the introduction of personal innovations until those methods which appear reasonable shall have been proven faulty. (*c*) The value of Morrison's adhesive strapping to keep in approximation the denuded peritoneal surfaces, and at the same time to compel the serous effusion to find its only available space in the pelvis, appears to us most evident. The importance of the long continuance of this device we have

accentuated on two occasions, when a hospital interne attempted at the end of four weeks and again later to dispense with the adhesive strapping. Each time an accession of ascitic fluid to the upper part of the peritoneal cavity was apparent. (*d*) An unusual vascularity of the granulation tissue forming the infra-umbilical fistula was shown on several occasions in one case, especially during the last stages, at dressings, by so considerable a hemorrhage as to require instant plugging. From this the writer has inferred that an important and considerable part of the anastomotic circulation may in this patient's case be maintained by this particular band of adhesions."

69. **Congenital Hip Dislocation.**—Ochsner discusses the frequency, which is uncertain though the condition is not uncommon, the supposed etiology, pathology, symptoms, etc., of congenital hip dislocation and reports cases that have come under his care. He gives in one case the measurements and condition of the pelvis which was removed at postmortem, death having occurred from convulsions, which showed that he had obtained almost perfect anatomical results by the Lorenz method.

70. **Rectal Tumors.**—The advantages of the abdominal route for the operation for rectal tumors are claimed by Abbe, who in conclusion says that the operative method for cancer in different parts of the rectum must still be elective. There is no one method. The perineal route is the most available for very limited and very low down growths. The Kraske sacral method is available for a moderate number of growths which exhibit slight malignancy as to infiltration, and are not more than a short finger length within the anus. But the abdominal method combined with those just mentioned, more nearly meets the present attitude of surgery in seeking as wide and thorough extirpation as possible for malignant growths. The artificial inguinal anus had best always be made at the time of operation, and need not be done beforehand. When the section of the rectum is made well up to the sigmoid, the ends of the severed gut should be inverted by a stout silk purse-string suture for more perfect cleanliness and handling.

81.—See abstract in THE JOURNAL, xxxviii, p. 51.

82.—Ibid., p. 124.

83.—Ibid.

84. **Diphtheria.**—Christie's article is offered as a reply to one that appeared in the *Western Medical Review* of March 15, by Dr. Wyman, doubting the Klebs-Loeffler bacillus as the cause of the disease. Christie is perfectly satisfied that the presence of this germ is an essential condition, and in his treatment of diphtheria uncomplicated with any other affection he first uses antitoxin. Then he meets any symptoms that arise on the expectant plan, clearing out the passages with gargles, spraying out the throat and nose, and the use of strychnin for the circulation and respiration. During convalescence he has used such remedies as seemed to be called for, often arsenic and iron. In mixed cases more active treatment is required, such as quinin, tincture of the chlorid of iron and alcohol. He is of the opinion that chlorin water would prove as efficacious as in streptococcus infection in the puerperal state, but he has had no experience with it. He attributes his good fortune to the early use of antitoxin, and its protection of the system from the depressing influence of the disease.

89. **Hay Fever.**—Hope holds that one of the chief lesions of hay fever is an acute inflammatory process of the middle turbinate, and if this site of susceptibility to the influence of external surroundings can be removed, the avoidance of pollen and the constitutional remedies addressed to the nervous diathesis will easily have passed into the category of things of altogether secondary value. He reports cases treated by the removal of certain portions of the middle turbinate and resulting arrest in vasomotor irritation. He thinks it unnecessary to speculate concerning the rôle played by pollen in these cases, if by ablating the morbid structure to which it is responsive no unusual liability to inflammatory action will follow.

90. **Septal Deflections.**—The operation here described by Gleason consists of a rectangular incision around the deformed area. The vertical lines of the flap thus made are as long as possible in order to take advantage of the leverage which the resiliency exerted at the neck of such a quadrilateral flap has to overcome in order to spring the lower edge of the flap back into its former abnormal position. He only cuts away a portion of the redundant tissue where it is sufficiently great to entirely occlude the formerly unobstructed nares. The technic of the operation is described in detail.

91. **Septal Deformities.**—Fetterolf uses a special instrument devised by him which he calls the saw-file, combining the action of both instruments. He operates under general anesthesia, painting the septum with adrenalin chlorid, and cuts one or two grooves over the septum as far as the perichondrium of the opposite side. When he can he makes the cuts cross each other so as to remove the antero-posterior redundancy. The operation is finished by the introduction of Kyle's tube. The after-treatment consists in watching the patient. The tube is not removed for five days unless there is special irritation or tenderness. It is kept clean by spraying with warm alkaline solution followed by some bland oil, and is removed and cleansed at intervals ranging from two to four days. If there is evidence of pressure at any point, the tube can be readily indented to accommodate the projection or the edge can be trimmed away should it be cutting into the soft parts. The advantages claimed for the operation and the saw-file instrument are given by him as follows: "1. No preliminary dissection of the mucous membrane is required. 2. A properly-shaped strip of tissue is removed. 3. The strip is quickly removed, so that prolonged anesthesia is not required. 4. The margins of the cut are exactly parallel, and thus accurate coaptation and quick union are promoted. 5. The bony septum can be attacked as satisfactorily as the cartilaginous."

92. **Septal Curvature.**—Brown thinks the habit of wiping the nose in one direction has a real effect in aggravating this deformity. He does not think when the septum is curved to one side the triangular cartilage is usually curved to the other; in fact, the opposite is the rule. Deformities may be confined entirely to the cartilaginous region, the concavity on the one side being book-notched in form, and ending abruptly at the commencement of the bony septum, the convex side being rounded and hypertrophied in the region of the tubercle. The rubber splints, as suggested by Mr. Lake, are especially useful, made with sheeting of various thicknesses. He cuts away the tubercle under cocain and adrenalin and makes one or two incisions through the convex surface and through the cartilage, a short distance apart and parallel to each other. The incisions are usually made on the bevel, enabling the cut edges to glide over each other. A splint is now chosen that after insertion will produce slight pressure on both the inferior turbinated and septum when straightened, and is not removed until healing and solidity have been accomplished, whether it takes two weeks or four, or even more. The passage should be regularly cleansed by the use of a cotton holder dipped in a weak solution of cocain or mentholated albolene or other medicament. He usually allows the patient to go home and inform him of the progress of the case and return for examination at certain times. The advisability of moderate tightness of the splint is proven by its elasticity. It promotes absorption of the overlapping edges of the cut cartilage. He has not found any inconvenience from the occurrence of sepsis in these cases and reports observations. These splints can readily be made by the surgeon, the only tools required being a sharp knife, a pair of scissors, a file and a piece of sandpaper. The surgeon should keep an oversight of the patient for the first few days, subsequently keeping in touch with him until the splint is finally removed.

94. **Heroin.**—Rosenberg uses the watery solution of heroin, 1 to 40, applying it to the larynx for local cough and as an analgesic. He has seen considerable benefit from it in laryngeal tuberculosis, and reports briefly a number of cases.

103. **Perineal Section.**—The unusual complication of perineal section here mentioned by Lydston is due, he thinks, to a congenital anatomic aberration of the urethra in which prac-

tically two canals lie side by side for the greater portion of the external urinary tract. He reports three cases where this seemed to be the cause of the difficulties.

106. **Hydrocele.**—Royster believes the safest plan for the radical cure of hydrocele is the injection of tincture of iodin or pure carbolic acid, the latter preferrd. If it fails, excision of the sac offers the best chances for success. He has had in his recent practice 16 cases, one of which was bilateral, and 15 of these were treated by injection, and one by excision of the sac after failure of iodin injections. None of the cases recurred.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures and single case reports are omitted unless of exceptional general interest.

British Medical Journal (London), August 9.

1 Introductory Address Delivered at the Opening of the Section on Obstetrics and Gynecology, British Medical Association. D. Lloyd Roberts.
2 A Discussion on the Precise Part Played by Vaccination as Carried Out in This Country in Preventing the Spread of Smallpox.

The Lancet (London), August 9.

3 Carcinoma in Women Chiefly in Its Clinical Aspects. William Japp Sinclair.
4 Acetone Series of Products in Connection with Diabetic Coma. (Concluded.) F. W. Pavy.
5 Myoma of the Vagina. W. Roger Williams.
6 *The Diagnosis and Treatment of Malignant Stricture of the Esophagus. Charters J. Symonds.
7 *On Pancreatic Caiculus, with Notes of a Case. B. G. A. Moynihan.
8 *Hypoplasia of the Aorta as a Cause of Aneurism. W. Lee Dickinson.
9 Verbal Obsessions. James Shaw.

The Practitioner (London), August.

10 Summer Diarrhea of Infants. W. Cecil Bosanquet.
11 *The Public Health Aspects of Summer Diarrhea. Arthur Newsholme.
12 The Bacteriology of Epidemic Diarrhea and Its Differential Diagnosis from Other Similar Diseases. M. H. Gordon.
13 *The Causation of Carcinoma and Sarcoma. (Concluded.) Alexander G. R. Foulerton.

Journal of Tropical Medicine (London), August 1.

14 Studies in Plague. (Continued.) C. Terni.
15 The Theory of the Causation of Beri-Beri by a Toxin Conveyed by Rice Considered in the Light of Local Experience of the Disease. E. A. O. Travers.

Archives de Neurologie (Paris), July and August.

16 (No. 79.) *Nouvelle contribution à l'étude de l'épilepsie vertigineuse et à son traitement par le bromure de camphre. Bourneville and Ambard.
17 Contribution à l'étude de l'action physiologique de la valeriane et des valerianates. C. Féré.
18 De la présence d'un parasite dans sang des épileptiques. M. Bra.
19 (No. 80.) *Cas de papillome épithélioide du noyau rouge (red nucleus).—Contribution à l'étude des fonctions du noyau rouge. Raymond and R. Cestan.
20 Tremblements infantiles et nystagmus congénitaux. Essai de classification séméiologique. E. Lenoble.
21 Cas de délire épileptique. A. Petit.

Bulletin de la Soc. Med. des Hop. de Paris, xix.

22 (No. 22.) *La stéatose hépatique latente des alcooliques. A. Gilbert and P. Lereboullet.
23 Chlorurie. C. Achard.
24 Dosage approximatif des chlorures urinaires. C. Achard.
25 Hématurie et hémosialémèse dans 3 cas d'hystéro-traumatisme. R. Bernard.
26 Accidents épileptiformes chez les hémiplégiques par hemorrhagie cérébrale ancienne. Touche.
27 (No. 23.) Non-antagonism Between Scarlet Fever and Tuberculosis. Simonin.—Les rapports de la scarlatine et de la tuberculose.
28 (No. 24.) *Traitement de la syphilis par les injections intraveineuses de cyanure de mercure. J. Renault.
29 (No. 25.) Les angines diphthériques malignes observées en 1901 et 1902. A. B. Marfan.
30 Contribution à l'étude des pleurésies biliaires. A. Gilbert and P. Lereboullet.
31 Sur les infections secondaires au cours des méningites cérébro-spinales. E. Sacquépée.
32 Le dicrotisme dans la fièvre typhoide. C. Oddo and V. Audibert.

Presse Medicale (Paris), July.

33 (No. 54.) Electric Enema. A. Zimmern.—Le lavement rectal électrique; histoire; technique.
34 (No. 55.) Traitement du furoncle. P. Desfosses.
35 (No. 56.) *Traitement de l'endométrite blennorrhagique par les injections d'acide picrique intra-utérines. Siredey.
36 Venesection in Art and Practice. P. Desfosses.—La saignée.
37 L'anatomie des centres nerveux. J. and A. Déjerine.
38 (No. 57.) Lavage du colon. Technique. Froussard.
39 (No. 58.) La valeur de la dionine dans le traitement du zona ophthalmique. Terson.
40 Removal of Spots Caused by Picric Acid with 10 per cent. Lithin Carbonate or Benzoate. Sebatier.—Le carbonate de lithine contre les taches d'acide picrique.
41 Xavier Bichat. Son influence sur les sciences biologiques. P. E. Launois.
42 Report of Saratoga Meeting of American Medical Association.
43 (No. 59.) La valeur du hermophényl dans le traitement de la blennorrhagie. Boudin.
44 *Traitement chirurgical de la fièvre typhoide. J. S. Dauriac.
45 Variation des races et des espèces. P. Desfosses.
46 Indications du lavage du colon. Froussard.
47 (No. 60.) Des fractures spontanées chez les syringomyéliques. L. Renon.
48 Angine due au bacillus megaterium. H. Vincent.
49 Avantages des injections mercurielles solubles à doses massives. Jaulin.
50 (No. 61.) Des indications dans le traitement du strabisme. F. De Lapersonne.
51 Restriction of Visual Field in Rachitis. C. Valentino.—Rétrécissements du champ visuel chez des rachitiques.

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52 (No. 27.) *Des injections de paraffine en oto-rhino-laryngologie. Broeckaert (Ghent).
53 (No. 28.) *De la lepto-méningite précoce et foudroyante consécutive à l'opération radicale de l'empyème frontal. Luc (Paris).
54 (No. 30.) *Contribution à l'étude des complications bronchopulmonaires consécutives aux opérations pratiquées sur les voies aériennes supérieures et particulièrement sur le larynx. P. Jacques (Nancy).

Centralblatt f. d. Grenzgebiete der Med. und Chir. (Jena).

55 (No. 12.) Spastic Affections of the Alimentary Canal. O. Langemak.—Spastische Erkrankungen des Magendarmtractus. Critical Review. (Commenced in No. 10.)
56 (No. 13.) Die Actinomycose der Brust-Organe (Lunge, Pleura). A. Nossal. Critical Review. (Commenced in No. 12.)

Centralblatt f. Chirurgie (Leipsic), July 26 and August 2.

57 (No. 30.) *Treatment of So-called Inoperable Angioma of the Face. A. Weischer.—Zur Behandlung sog. inop. Gesichtsangiome.

Centralblatt f. Kinderheilkunde (Leipsic), 2 to 7.

58 (No. 2.) Dietetic Prophylaxis of Athrepsia Infantum. L. Fürst.—Lässt sich die Athrepsia inf. auf. diätet. Wege verhüten?
59 (No. 4.) Accidental Heart Sounds in Infancy and Early Childhood. Von Starck.—Bemerkungen über das Vorkommen accidenteller Herzgeräusche in den ersten Lebenjahren.
60 (No. 7.) *"Nährzucker" in Infant Feeding. A. Klautsch.—Ueber Soxhlet's Nährzucker.

Deutsches Archiv f. Klin. Med. (Munich), lxxii, 5.

61 Eventratio diaphragmatica. H. Doering.
62 *Influence of Carcinoma on Gastric Digestion. C. P. Emerson.—Einfluss des Carcinoms auf die gastrischen Verdauungsvorgänge.
63 Ueber das Erscheinen von Typhusbacillen im Urin. J. Jacobi.
64 *Cardiac Arrhythmia. F. Lommel.—Klinische Beobachtungen über Herzarrythmie. (Concluded from No. 3.)
65 Zur path. Anatomie der Chorea minor. M. Reichardt.
66 Facial Paralysis. G. Köster.—Zur Lehre von der Facialislahmung. (Concluded from No. 3.)
67 Ueber Phosphaturie. F. Soelbeer.
68 Internal Friction of the Blood. C. Hirsch and C. Beck.—Viscosität des lebenden menschlichen Blutes.

Deutsche Med. Wochenschrift (Leipsic), July 10 to 31.

69 (No. 28.) Zur operativen Behandlung der Perityphlitis. Rinne (Berlin).
70 Transformation of Purin Bodies. O. Minkowski.—Ueber die Umwandlung der Purinkorper im Organismus.
71 Electric Conductibility of Serum in Uremia. A. Bickel.—Zur Lehre von der elekt. Leitfähigkeit des menschlichen Blutserums bei Urämie.
72 *Blackwater Fever.—Beitrag zur Aetiologie des Schwarzwasserfiebers. R. Ruge.—Beitrag zur Casuistik der Malaria und des Schwarzwasserfiebers. C. W. Schlayer.
73 Malaria und Carcinom. J. Goldschmidt.
74 Ergotinum Lipsiense St. Jacob. C. Stich.
75 Portable Syringe. Dreyer (Cologne).—Eine tragbare aseptische Subcutanspritze.
76 (No. 29.) Ueber Carbollysoform. Elsner.
77 *Ueber die Indikationen zur chirurgischen Behandlung ulceröser Lungenprocesse. R. Riegner.
78 Peripheral Leucocytosis After Massage. E. Ekgren.—Das Verhalten der Leukocyten in menschlichen Blute unter dem Einfluss der Massage.
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80 Perforation oder Kaiserschnitt? Zanke.
81 *Death Under Chloroform from Fat Embolism After Fractures. H. Euphrat.—Fettembolie nach Oberschenkelhalsbruch als Todesursache während der Chloroformnarkose.
82 Carcinomstatistik. F. Prinzing.—Ibid. G. Heimann.
83 *Value of Chlorid of Lime for Burns. F. Tichy.—Chlorkalklösung als Antisepticum bei den Brandwunden.
84 (No. 30.) Weitere Mittheilungen über Embryotrophe. R. Bonnet.
85 Technik der peroralen Tubage. F. Kuhn.
86 Soxhlet's "Sugar Food" in Infant Feeding. S. Weissbein.—Zur Frage der künstlichen Säuglingsernährung.
87 Pincers for Foreign Bodies in Nose and Ear. Damrow.—Neue Fremkörperpinzette.
88 (No. 31.) *Blood Count in Pregnancy and Parturition. W. Zangemeister.—Ueber die Zahl der Leukocyten im Blute von Schwangeren, Gebärenden und Wöchnerinnenen.

89 Absence of Left Supraclavicular Fossa Sign of Aneurism of Arch of Aorta. Dorendorf (Gerhardt's clinic).—Ueber ein bisher wenig beachtetes Aneurysmensymptom.
90 Action of Ticks on Ingested Animal Blood. P. Grützner.—Ueber die Wirkung der Zecken auf thierisches Blut.
91 Successful Bottini Operations After Long, Complete Retention. A. Freudenberg.—Einige Fälle von erfolgreicher Bottini'scher Operation bei besonders lange bestehender completer Urinverhaltung.
92 Beitrag zur Statistik der Bottini'schen Prostatadiscision. Rörig.
93 Syphilis in Recent French Literature and Plays. Schober (Paris.)
94 Ueber Roborat in der Privatpraxis. G. Flatau.

Dermatologisches Centralblatt (Berlin), July.

95 *Herba violæ tricoloris in harnäckigen Fällen von Acne vulgaris. S. Behrmann.

Deutsche Zeitschrift f. Chirurgie (Berlin), lxiv, 1 to 3.

96 Ueber Ileus bedingt durch seltenere Formen von Volvulus. Blecher.
97 *Sarcomata of Femur. A. Jenckel.—Knochensarcome des Oberschenkels.
98 Twenty-three Cases of Injuries of Kidneys. Waldvogel.—Ueber 23 Fälle von Nierenverletzungen.
99 New Steam Sterilizer. R. Beckmann (Lodz).—Ein neuer Dampfsterilisator für chir. und bakt. Zwecke.
100 Beitrag zur sog. Autoplastik nach der Radicaloperation des Carcinoma Mammæ. R. Göbel.
101 *Ueber subcutane Darm-Rupturen nach abdominellen Contusionen. A. Neumann.
102 Hemorrhage from the Stomach in Appendicitis. E. Nietsche.—Magenblutung bei Appendicitis.
103 Tardy Chloroform Death. M. Cohn.—Fall von protrahirter Chloroformwirkung mit tödtlichem Ausgang.
104 Treatment of Old Luxations of Elbow. F. Weber.—Ueber die operative Behandlung veralteter Ellbogenluxationen.
105 *Die Tuberculose der Pubis-Symphyse. P. Herz.
106 *Pulsating Tumor in Plexus in Supraclavicular Fossa. G. Schrader.—Zur Kenntniss pulsirerenden Plexusgeschwülste in der Fossa supraclavicularis.
107 *Experiences with Resection of Carcinomatous Stomach. O. Kappeler (Constance).—Meine Erfahrungen über Magenresection wegen Carc.

Grece Medicale (Syra, Greece), June 15 and July 1.

108 *De la lèpra. M. Hadjimichalus (Athens).
109 *Des névrites dans le paludisme. T. Triantaphyllides (Batoum).

Janus (Amsterdam), July.

110 Myopia Among Writers of Cuneiform Inscriptions. Oefele.—Myopie der Keilschriftgelehrten.

Gazzetta degli Ospedali (Milan), August 3.

111 (No. 87.) *L'alcool nella tubercolosi sperimentale. A. Gervino.
112 Varie manifestazioni di un' epidemia tifosa. Morelli.
113 Epilessia in malarico. F. Corsini.
114 Respiration and Fever in Pneumonia. M. Sangiovanni.—Il respiro e la febbre nella polmonite.
115 Delle proporzioni visuali. G. F. Costantini.
116 Six casi di febbre malarica perniciosa. Z. Francesco.

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117 (No. 7.) Om isolation ved difteria. Solberg.
118 (No. 8.) Chloroform in Normal Childbirth. A. Vogt.—Kloroform ved normale fodsler.
119 Cure of Ileus with Atropin. O. Majlaender.—Et tilfaelde af ileus helbredet ved atropin.
120 (Nos. 9 and 10.) *Arrangements for Bathing in Finland, Norway and Sweden. C. Romcke.—Lidt om finske, norske og svenske badeindretninger. (Commenced in No. 1.)
121 *Insane Asylums in Norway (Colonies). M. Holmboe.—Om sindsygekolonier i Norge.
122 Fragmenter til den hygieniske, saerlig den diaetetiske terapis praksis. C. Jürgensen.
123 Contact Infection of Tuberculosis Cutis from Infected Cattle. K. Andersen.—Tuberculosis cutis fremkaldt ved infektion fra tuberkuloest kvaeg.
124 Out-treatment of Women with Venereal Diseases at Christiania. R. Krefting.—Om Behandling af kvinder med venerisk sygdom udenfor sygehus i Kristiania.
125 (Nos. 11 and 12.) Charlatanism. H. Arnesen.—Kvaksalverondet.
126 Ileus—Atropin J. Solem.
127 (No. 13.) Epidemic of Dysentery at Aaseral. G. Noerregaard.—Blodgangsepidemien i A.
128 Lidt om revakcination i marinen. E. Klaveness.
129 *Report of Beri-Beri Committee.
130 (No. 15.) *Danger of Contagion from Dismissed Scarlet Fever Patients. P. Aaser.—Om smittefaren ved udskrevene skarlagensfeberpatienter.
131 *Bathing Facilities in the Sydvaranger District. B. Wessel.—Om bruge af badstubad i Sydvaranger laegedistrikt.

Brazil Medico (Rio de Janeiro), March 8 to July 15.

132 (Nos. 10 to 15.) Mosquitoes and Yellow Fever. H. de Gouvea.—Os mosquitos e a febre amarella.
133 (Nos. 10 to 22.) *Attempt at Physiologic Treatment of Yellow Fever. A. Ferrari.—Ensaio de therapeutica physiologica na febre amarella.
134 (No. 11.) A broncho-pneumonia infantil. A. E. Shipley.
135 *New Studies in Yellow Fever. J. B. de Lacerda.—Novos estudos sobre a febre amarella.
136 (No. 12.) Semeiotica das convulsoes na infancia. F. Figueira.
137 (No. 16.) Appendicitis in Pregnancy. S. Coelho.—A appendicite na mulher gravida.
138 (Nos. 17 to 19.) Tuberculosis in the Army. I. da Rocha.—Tuberculose no exercito.
139 Intestinal Button Cut Out of a Potato. D. de Almeida.—Botao feito da solanum tuberosum para sutura intestinal.
140 (Nos. 18 to 23.) Clinical Varieties of Malaria at Rio. F. Fajardo.—Notas para o estudo das formas clinicas do impaludismo no Rio de Janeiro.
141 (No. 25.) *Estudos sobre a diazo-reaccaco applicada particularmente a algumas molestias tropicaes. A. Austregesilo.

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6. **Malignant Stricture of the Esophagus.**—The diagnosis of malignant esophageal stricture resolves itself into passage of a bougie to ascertain the presence of depression, and treatment in deciding the best way of introducing food. So many cases, however, are treated for dyspepsia that the early symptoms, Symonds says, are worthy of consideration. The gradual increasing of dysphagia is a common history in most cases. In a number of cases the onset is sudden. He suggests asking the patient to swallow liquid as an aid to the diagnosis. Often the appearance is characteristic. The patient makes the ordinary efforts followed by one or two smaller ones. These are accompanied with certain peculiar movements of the neck. He brings up a little gas, often hits his chest and says the fluid is swallowed. Kussmaul's sign of listening at the back to hear the fluid arrested by the stricture and then trickle through is interesting, and when the bougie is not passed sometimes valuable. The danger of the bougie, he thinks, is over-estimated, though it may exist with a fine bougie and in advanced cases. The three situations in which malignant disease may occur are mentioned the upper third and cricoid orifice, the lower end and gastric orifice, and the central region. The first, in the cricoid region or beginning just below the ring, is in his experience always malignant. It begins eight or nine inches from the teeth and involves two or three inches; the chief peculiarity is its tendency to cicatrize and contract. The contraction is irregular. In the diagnosis of diseases of this situation he has found four conditions giving rise to confusion: 1. Dysphagia occurring in elderly people which he thinks may be possibly due to excessive cricoid ossification or some bony outgrowth. 2. The nervous form, especially in men, which he speaks of as giving special difficulty in cases of doctors. 3. That of a pharyngeal pouch. When well marked the symptoms are so well defined as to clear this difficulty up quickly. 4. Malignant disease of the lower end of the pharynx involving the arytenoids. The main symptoms are pain in swallowing, a peculiar alteration of the voice, and the growth can usually be seen. They occur more frequently in women than in men. In the middle third, sarcoma or myoma may exist, but are rare. Carcinoma is the rule. Aneurism and mediastinal growths rarely give rise to serious dysphagia. An esophageal pouch in the middle or lower section is sometimes difficult to detect. The lower end, a point from 15.5 to 17 inches from the teeth, is, in Symond's experience, the only locality where we find a simple obstruction and one is justified in saying of obstruction in this situation that the case may be simple. The mechanical difficulty being overcome the future is more hopeful than that of obstruction in any other situation. He disbelieves in spasmodic stricture so-called, aside from hysterical cases. When the stomach is infiltrated by malignant disease and reduced in capacity, the so-called leather-bottle stomach—the resemblance to obstruction at the cardiac end of the gullet is very marked. He summarizes the diagnosis of esophageal obstructions in the following: "1. Among early symptoms we may have so-called dyspepsia, nausea, and repulsion for food; pain alone when the central district is affected. 2. The passage of a bougie is the only way to clear up the case and its employment need not be feared. 3. Extra-esophageal disease rarely gives rise to serious dysphagia. 4. Spasmodic obstruction, apart from the hysterical form, has always, when decided, an organic cause and this would be better called intermittent dysphagia. 5. With regard to the three special districts it may be said (*a*) that all organic obstruction in the upper third is malignant and has a special tendency to cicatrize; (*b*) that in the central half of the gullet a sarcoma or a myoma, both rare diseases, may cause fatal obstruction, and here also a pouch may give rise to difficulty in diagnosis, but can generally be excluded; and (*c*) that in the lower end alone does simple stenosis occur,

and here there may be difficulty in distinguishing from cancer of the stomach causing great reduction of the cavity (leather-bottle stomach). 6. Finally, in estimating the extent of the disease, the special value of the steel bulb is noted and also the use of the coudé bougie in obstruction at the lower end." In regard to the treatment the general question is put as follows: "1. While the patient can swallow fluids and semi-fluids and while a bougie can be passed and plenty of nourishment taken he may be left alone so long as (*a*) he can swallow well or (*b*) a small bougie, No. 12 catheter gauge, can be passed. 2. If the dysphagia increases, even though a bougie can be passed, then a tube must be inserted or gastrostomy must be performed. These conditions are seen in the soft fungating forms. 3. If a bougie can not be passed or goes with difficulty then the same course must be followed, as we know that complete closure may occur at any time. 4. If both conditions arise—i. e., the patient can not swallow and a bougie can not be passed—then immediate mechanical treatment is required." He does not advocate the passage of a bougie with a view of dilating a stricture and gives details as to the use of tubes and their introduction and retention. He has found it difficult to treat cases of disease of the lower end of the esophagus with tubes. Early gastrostomy in these cases seem to him the best advice. It may be possible, especially with the coudé bougie, to dilate the obstruction if the gullet has had a rest, and we may anticipate some improvement in the swallowing. He says, reviewing the whole question of treatment of the class included in gastrostomy one may say as regards the latter, that it at once disposes of all the difficulty as regards swallowing. That in obstruction of the cardiac end it should be performed early and that in all patients intolerant to the tube and bougie, time should not be wasted. In many cases, however, we will have to use the alternative method of tubage. As regards cricoid strictures and disease of the lower part of the pharynx he is quite satisfied with the rubber tube. The short tube is useful in stricture occurring 10 to 14 inches from the teeth. It has no advantages where there is cough on swallowing, indicating perforation, and it is of little value when the growth occupies a long stretch of the gullet. It is seldom useful in stricture involving the cardiac orifice and can not, as a rule, be borne in disease involving the cricoid level, and gastrostomy, if selected, should be performed early. In disease of the central portion the short tube is serviceable in a fair number of cases.

7. **Pancreatic Calculus.**—The subject of pancreatic calculus is reviewed and cases reported in detail with notes by collaborators, Dr. Robertson discussing the clinical history. Moynihan thinks this is only the second case as yet reported of operation for this condition.

8. **Aortic Hypoplasia.**—Dickinson has found in two successive postmortems of cases of ruptured abdominal aneurism, where no other cause could be ascertained, that the aorta and large arteries were in a state of hypoplasia, that is to say, constructed on a small and delicate scale, narrow in caliber and thin in walls, though in other respects practically healthy. This put him on the lookout for other cases of hypoplasia, and in his 2500 postmortem examinations since that time he has only observed three or four cases. He reports cases, some of which have been published before in the Transactions of the Pathologic Society, and remarks that congenital delicacy of the arteries must predispose to aneurism, though the influence of this factor has been largely overlooked. Virchow remarks on the liability of the hypoplasic aorta to fatty degeneration of its middle coat, spontaneous rupture and dissecting aneurism, but there is no consideration of the subject in formal treatises on aneurism of the aorta. The greater frequency of rupture of aneurism in women than in men is noteworthy, and that they are notably more liable to hypoplasia not necessarily to be seen unless looked for, may be the reason for the more untoward course of aneurisms in them. In another way the association of aneurism and hypoplasia is bad, that is as regards the prospect of cure by the deposition of fibrin. Arterial hypoplasia has been credited with a leading place in the rather scanty morbid anatomy of hemophilia, which clinical pathology has proven to depend on deficient coagulability of the blood. While hypoplasia does not always or even generally imply hemophilia, it at least constitutes an ominous link between aneurism and the possibility of this undesirable condition.

11. **Summer Diarrhea.**—The public health aspects of summer diarrhea are reviewed in a statistic way by Newsholme, who notices the fact that about 75 per cent. of the registrations of deaths from diarrhea occur under one year of age. In the third quarter of each year the proportion is still higher. The various causes are noticed; hypothetically the micro-organism, but this can not, he says, be claimed as an unconditional cause of epidemic diarrhea for which certain conditions of temperature, rainfall and soil possible contribute their factors. In the first place it is chiefly a disease of urban life and of the artisan and the lower laboring classes. The possible influence of the industrial occupation of the mothers is noticed in this connection. Towns which have adopted the water carriage system of sewage as a rule suffer much less from diarrhea than those that adopt other methods of removal of excrements, and the more perfect scavengering arrangements are also hostile to epidemic diarrhea. The influence of soil is also a decided one. Where the dwelling houses have, as their foundation, rock with little or no superincumbent loose material, the diarrheal mortality is, notwithstanding many other unfavorable conditions and surroundings, low. On the other hand, a loose soil is a soil on which diarrheal mortality is apt to be high. Newsholme would go so far as to say that given two towns equally placed so far as regards social and sanitary conditions, their relative diarrhea mortality is proportionate to the height of temperature and the deficiency of rainfall of each town. There is a general inverse relationship between rainfall and diarrhea and a direct relationship between temperature and diarrhea. The fundamental condition, he says, favoring epidemic diarrhea is an unclean soil, the particular poison from which infects the air, and is swallowed, most commonly with food, especially milk. Reviewing the bacterial investigation of summer diarrhea of infants he concludes that proof that the disease is due to any one specific micro-organism is not obtained. It seems probable that different epidemics or cases of the disease may be due to different organisms, but further investigation is necessary.

13. **Cancer.**—In this concluding paper Foulerton argues against the probability of the parasitic theory of cancer: "1. That an hypothetical parasite does not in any important way elucidate the pathology of carcinoma; 2, that, so far as theoretical considerations go, the balance of probabilities is against the theory that carcinoma is caused by a parasite from without; 3, that there is no evidence that any of the parasites which have been described as the cause of carcinoma have any causal relationship to the disease; and 4, that whilst we are ignorant as to the immediate causation of cancer, the practically undisputed fact that the epithelial cells, whose vicious proliferation produces the obvious phenomena of carcinoma, are capable of migration from their normal environment, and of self-reproduction when in abnormal surroundings, renders any parasitic theory unnecessary." As regards sarcoma the case is somewhat different. In that class in which the secondary foci of new growth are mainly composed of cells histologically identical with the cells of the primary tumor, one would feel inclined to assert with some confidence that the pathological process is probably similar to that which results in carcinoma, and that the disease is not a parasitic one. Where, however, we can not be certain as to the precise source of the cells composing the secondary foci of new growth, the case is different. One can not here exclude the possibility of a parasitic cause. It seems highly probable that some of the cases of new growth which on clinical grounds are diagnosed as sarcoma are in reality cases of infective parasitic disease. The theory that carcinoma is due to some abnormality of distribution of vital function is noticed. He says we are absolutely justified in assuming that the essential cell of the carcinomatous tumor is a normal cell except so far as it may be

subject to casual modifications due to its altered environment. The carcinoma cell follows closely, so far as its altered condition will allow, the habits of growth which are characteristic of the normal epithelial cells from which it has its origin. The question under what condition the epithelial cell can penetrate its basement membrane and gain access to the lymph channels of the subepithelial connective tissue is not so easy to decide. From the clinical side one might suggest that such penetration might occur under two conditions: as the result of traumatic injury, and as the result of alteration of the basement membrane consequent on chronic inflammation. The question why the epithelial cell, having left its normal environment, is unable to maintain an independent existence in the foreign tissues of the child as it can in those of the adult is also briefly discussed. He says we can divide the post-natal term of life into three periods: 1. The period of activity on the part of the mesoblastic tissue resulting in the growth of the framework of the body; then the period in which activity of the epithelial cells, and mainly of those of the epiblastic layer, is the main factor, and finally, there is the stage of degeneration. The explanation of the marked excess of activity in certain of the epithelial cells which occur after the coming on of puberty, as shown in the growth of hair, epithelium of the sexual glands, etc., is possible either by supposing fresh stimuli specific for the growth of epithelial cells coming into existence, or that old influences inhibitory of the activity of epithelium are ceasing to operate. He reports here experiments on immunity produced by the thymus glands, which have thus far not been specially successful, but which may indicate future lines of research.

16. **Camphor Bromid in Epilepsy with Vertigo.**—Bourneville has been using camphor bromid for several years in the treatment of chorea, insomnia, hysteria, delirium tremens, etc., and has found it extremely effective, especially in epilepsy with vertigo. He published in 1895 five cases of the latter treated effectively with it and now describes in detail three more. Two were symptomatic epilepsy and one idiopathic. All were clinically cured, with no recurrence of the seizures or vertigoes to date, several years in one case and two in another. He mentions also that a patient with a painful affection of the bladder was cured with the camphor bromid. In one of the epileptics the bromid failed to produce the usual improvement, and it was found that the capsules were exceptionally hard and almost impossible to dissolve. As soon as better capsules were provided the effect of the bromid was rapidly apparent. He urges physicians to adopt camphor bromid as a reliable drug in a large number of affections of the nervous system, and in epilepsy with vertigo in particular. He emphasizes in the cases he reports the improvement in the character that accompanied the cure of the seizures and vertigoes. He gives 2 capsules the first week, 4 the second, 10 the fifth, suspends a week and recommences. Or else, 2, 4, 6, 8, then 6, 4, 2, accompanying it with a polybromid elixir.

19. **Tumor in Red Nucleus.**—In Raymond's patient the symptoms resembled those of Weber's syndrome—paralysis of the oculo-motor on one side and hemiplegia on the other. The motor disturbances, however, were distinguished by the fact that the hemiplegia was not complete but consisted rather in incoördination, ataxia, asynergia and dysarthria. They were accompanied by a generalized exaggeration of the reflexes. The autopsy revealed nothing but a primary endothelioma of epithelial aspect, originating in the pia of the peduncle and having destroyed to the left the whole of the red nucleus and to the right the inner side of the same nucleus. The foot of the two peduncles was intact.

22. **Latent Steatosis of the Liver in Alcoholics.**—On account of the clinical latency, this frequent result of the abuse of alcohol is practically unknown, and yet it deserves an important place in the pathology of the liver. It is more common than any other form of degeneration under these circumstances and is the unsuspected latent factor which aggravates the prognosis of apparently benign diseases. Pneumonia without this steatosis of the liver would frequently terminate in recovery, as heart and vessels are sound, but on account of the hepatic lesion it proves fatal. Traumatic lesions and operations are more serious for such subjects and intercurrent diseases vary from their usual course. The subjects are usually vigorous and young and do not seem to suffer from their addiction to alcohol until some intercurrent disease or traumatism reveals the hidden weakness. The liver is usually more or less hypertrophied and the autopsy shows the fatty transformation of many of the cells, accompanied in the severer cases by a latent fatty cirrhosis. The patients do not die from this steatosis, but they die from other affections on account of it.

28. **Treatment of Syphilis with Intravenous Injections of Cyanid of Mercury.**—Renault describes fourteen cases in which this treatment restored severe and rebellious cases to comparative health. He advocates intravenous injection for all cases of malignant secondary or severe tertiary syphilis on account of its reliability and rapid action. The only contra-indication is the difficulty or impossibility of injecting the solution into a vein too small for the purpose or buried in fat. He encountered this difficulty once in 20 subjects and Chopping three times in 76 cases. Intravenous injections not only have a much more rapid action but they prove effective in cases that have resisted all other methods of treatment. He follows Abadie's technic, injecting 1 cg. of a 1 per cent. solution of cyanid of mercury in a vein in the forearm every day or alternate day. After the first danger is past the mercurial treatment can be continued by the ordinary methods if preferred. The intravenous application is not at all painful and causes no induration at the spot nor perivenous exudation nor accidents of any kind. Chopping has succeeded in curing 45 patients with chancre with an average of 11 injections, and 14 cases of secondary accidents with an average of 21.

35. **Treatment of Gonorrheal Endometritis with Intra-Uterine Injections of Picric Acid.**—Siredey was inspired by de Brun's success with picric acid in the treatment of gonorrheal urethritis in man, to apply it in women. He injects about 2 c.c. of a saturated solution of picric acid (about 12 per cent.), and repeats the injection once or twice a week. In every case the pains and oppression rapidly disappeared, the purulent or muco-purulent opaque secretions soon became exclusively mucous and the gonococci vanished. They disappeared the more rapidly the earlier the injections were instituted. No caustic effect was noted in any case. The injections are very slightly if at all painful. He orders a daily vaginal injection of four or five quarts of a .5 per 1000 solution of permanganate in the interim.

44. **Surgical Treatment of Typhoid Fever.**—Dauriac is impressed with the fact that the lesions in typhoid fever are generally in the terminal portion of the small intestine. They may occur singly throughout the entire alimentary canal, but they are confluent at this point. It is therefore rational to assume that if the course of the feces could be diverted above this point the ulcerations would have a much better chance to heal as they would not be constantly irritated by the passage of fecal matters and the fermentation of the contents of the intestines in contact with them, while there would be less chance for the septic products to penetrate into the circulation through the raw surfaces afforded by the ulcers. Reasoning on these premises he made a fecal fistula in a recent case of typhoid fever in which the threatening course of the disease compelled heroic measures. The patient was a young man with temperature of 106 F. the nineteenth day and pulse 156, voiding almost pure blood per anum. The father knowing Dauriac's theory in regard to the benefit possibly to be derived from a fecal fistula above the terminal portion of the small intestine, begged for the intervention as a last resort. He therefore incised the left flank down to the peritoneum under cocain and brought to the surface a loop of the small intestine, not too near the ileocecal valve and yet not far enough to encroach too much on the jejunum to interfere with assimilation. He was guided by the patches of ecchymosis on the intestine as he approached the cecum. Fecal matters were discharged from the fistula thus made, free from blood, while the rectum continued to discharge fetid melenic masses for two days. He

was able to disinfect the lower portion of the intestines through the fecal fistula with salt solution. It was voided per anum in less than twenty minutes. The feces issuing from the fistula soon became formed. Thanks to the fecal fistula, nourishing food could be freely given at once without fear of disturbing the ulcerations below the fistula. Temperature was normal in three days after the intervention and the patient was eating a chop the seventh day. The fistula was definitely closed the thirty-sixth day and it could have been done earlier. He is convinced that the simple operation of establishing a fecal fistula would materially reduce the dangers of typhoid fever and queries whether if it were done early it might not attenuate all the accidents and arrest the infection. The temporary enterostomy does not require a valve and its final closure is simple.

52. **Paraffin Injections in Oto-Rhino-Laryngology.**—Broeckaert has adopted Brindel's method of treating ozena by injections of paraffin, recently described in THE JOURNAL. But he prefers a paraffin with a melting-point at 122 F. and mixes an antiseptic with it. He has found guaiaform excellent for the purpose. This is a combination of formic aldehyd and guaiacol. He adds it to the paraffin in a proportion of 5 to 10 per cent. and has been much pleased with the results. He describes his technic for this and other uses of paraffin prothesis. In one case of a fistula in the mastoid process he injected paraffin to fill up the defect. Some of it penetrated into the tympanum and the patient experienced pain and fainted. After removal of all the paraffin that had found its way into the ear, all symptoms disappeared.

53. **Early, Fulminating Lepto-Meningitis After Operation for Frontal Empyema.**—Luc's experience in the two fatal cases described impels him to proclaim the necessity of cauterizing with some powerful antiseptic after each stroke of the curette in a radical operation for frontal empyema. Streptococci had evidently found their way from the focus into the meninges, setting up what was practically an intracranial erysipelas. The only symptoms were fever, headache and stiffness at the back of the neck.

54. **Broncho-Pulmonary Complications of Operations on the Upper Air Passages.**—Jacques cites various authors to show the extreme frequency of these complications. Pinçonnat collected 171 cases of total ablation of the larynx (1890), and found that more than half of the 69 deaths were due to broncho-pulmonary complications, and also in 9 out of 17 cases of partial extirpation of the larynx. Jacques describes 2 personal cases and urges in conclusion that all operations on the upper air passages should be done with the minimum of operative traumatism. Simple excision of the tumor is far less dangerous than total or partial removal of the larynx. After the operation everything causing irritation of the upper air passages should be suppressed as far as possible, dressings, drains, gauze wicks, etc. They act like foreign bodies, which in fact they are, and prolong the irritation. When used to forestall hemorrhage the same result can be accomplished by keeping constant oversight over the patient for a few days, ready to apply forceps as needed. He must also be guarded from changes of temperature and excitement of any kind.

57. **Treatment of So-Called Inoperable Angioma of the Face.**—Weischer describes the case of a young woman deformed by an enormous angioma of the left cheek and parotid region. The lower lip was as large as a sausage, the skin over the cheek bluish, and the mucous lining of the cheek was netted with swollen veins. The tumor had commenced in early infancy but had never been painful. There did not seem to be cavitation and the structure resembled that of varices on the leg, only the veins were inextricably intermingled with innumerable anastomoses. He operated on it as if it were a varix, incising from the tip of the mastoid process to the middle of the hyoid bone, nearly an inch behind and below the angle of the jaw, after excision of the protruding lower lip. A rubber tube was applied around the chin and back of the head to control the hemorrhage and the lower jaw was also compressed by an assistant. But in spite of these precautions the bleeding was excessive. Some of the veins were as large as one's thumb, and the walls of the facial vein were so thin that it tore at a touch. It could only be ligated by applying a number of ligatures in turn, gradually reducing the lumen in this way. When the ligatures had all been applied the wound was sutured and a compressing bandage applied. In twenty-four hours the cheek had swollen to twice its former size, the tongue hung out of the mouth like a huge blue tumor, and everything was made ready for tracheotomy at a moment's notice as suffocation was threatened. The patient sat up in bed the first night and day, taking ice constantly, but the symptoms rapidly subsided. By the fifth day the tongue no longer protruded and the skin of the cheek rapidly resumed its normal contour and coloring. The wound healed by first intention. The portion of the angioma in front of the ear still persisted and two months after the first intervention the superfluous skin was excised and the former incision carried farther back allowing the veins to be cut and ligated as before. The results were the same as after the first operation. The cosmetic effect of the entire intervention is extremely satisfactory.

60. **Soxhlet's "Sugar Food."**—Klautsch considers the "Nährzucker" in combination with cow's milk an almost ideal food for infants. It supplies the carbohydrates in the form of dextrin and maltose. He has fed twenty-three infants with it and all have thriven remarkably as have also two sick nurslings.

62. **Influence of Carcinoma on Gastric Digestion.**—Emerson has established that there is a ferment in carcinoma tissue which digests albumin. This digesting phenomenon occurs in the incubator as also in the human stomach. The carcinoma tissue ferment transforms the albumin into products beyond the albumose stage. Its action is not checked by the presence of hydrochloric acid.

64. **Study of Cardiac Arrhythmia.**—Lommel classifies the pulsus bigeminus as, 1, extrasystole with increased intracardiac blood pressure, the "dynamic bigeminus"; 2, extrasystoles in cases of organic heart affections and 3, in cases of nervous affections and intoxications. In the first group the extrasystole does not signify insufficiency and can not be utilized for the prognosis. When the blood pressure is not high, then the extrasystole is an indication of some organic alteration in the heart muscle, except in very rare cases, when it is a manifestation of a nervous affection. It is sometimes possible to determine the location of the cause of the extrasystole. With exaggerated blood pressure, it is always at the ventricle, while it is generally located in the upper portion of the heart in case of an affection of the myocardium. His clinical experience indicates that respiratory arrhythmia is of purely nervous origin, especially during convalescence from an infectious disease and in case of irritation of the vagus center by a cerebral affection. The fact of its purely nervous origin is an important point for the differentiation of nervous and muscular heart affections.

72. **Blackwater Fever from Phenacetin.**—Schlayer reports the case of a navy officer who lived ten months in Africa, but protected himself against malaria by systematic preventive doses of quinin and never showed any indications of the disease. After his return to Berlin and suspension of the quinin he was attacked with tertian malaria progressing to genuine tropical fever. His physician had ordered him to continue the quinin for three months after returning to Germany, but he neglected this precaution. He took while on the African coast .5 gm. quinin at bedtime every fifth day. When the malaria developed at Berlin the physician ordered .75 phenacetin, and the next morning typical blackwater fever was evident. Schlayer remarks that the phenacetin was probably responsible for the hemoglobinuria, and adds that the reason why blackwater fever is always attributed to quinin rather than to any other drug is on account of its predominant use in the tropics.

77. **Indications for Surgical Treatment of Ulcerative Pulmonary Processes.**—Nine cases of ulcerative processes in the lungs have been treated surgically at the Berlin Urban hospital. The operations were reported in the *Archiv f. Klin. Chir.* for 1901 by Borchert. Riegner now reviews the same cases to establish the indications for future surgical interventions. Acute or subacute gangrene is of all ulcerative processes

in the lungs, the most promising for surgical intervention. Simple abscesses do not require an operation in most cases. The prospect of a cure from pneumotomy is slight in cases of chronic gangrene, bronchiectasia and tubercular cavities, on account of the multiplicity of the foci. Diagnosis of the focus is an unconditional prerequisite for surgical intervention. Evidence of a solitary gangrenous focus is afforded by the combination of the following diagnostic points, even in the absence of any symptoms indicating a cavity: 1, a circumscribed area of dulness surrounded by a normal area; 2, the recent appearance of an abundance of scraps of parenchyma in the sputa; 3, the skiagram which must coincide at every point with the physical findings. Three cases of acute or subacute gangrene were cured by the operation, another with a large abscess, and one of bronchiectasia. Three with bronchiectasia and one with chronic gangrene terminated fatally, and the autopsy confirmed the surmised extent and multiplicity of the foci.

81. **Fat Embolism After Fractures.**—Euphrat adds another to the list of sudden deaths from fat embolism after extensive fractures of the long bones. His patient was a robust man of 45, with a fracture of the neck of the femur, who died at the commencement of chloroform narcosis just after he had been placed on the operating table. He suggests that early massage after fractures of the long bones and changes of position are liable to induce fat embolism in the lungs and consequently they should be carefully avoided.

83. **Value of Chlorid of Lime for Burns.**—Tichy treats extensive burns of the second and third degree by applying oil for the first day, then pricking the blisters and applying compresses wet with a solution of 2.4 to 5 parts calcar. hypochlorosa to 990 parts water with 5 parts spirit of camphor. As the compresses dry the solution is poured over them to keep them constantly and copiously wet, and they are not renewed for four to six days. He has tried this method on one foot while the other was treated by ordinary measures and found that the first foot healed completely in two weeks while the other was four weeks in healing. He has never witnessed any inconveniences from its use in the forty cases in which he has applied it, while all healed with remarkable rapidity and no scars were left, he states.

88. **Leucocyte Count in Pregnancy and the Puerperium.**—This communication from Zweifel's clinic states that the leucocyte count has no value for prognosis or diagnosis in puerperal fever, as was established in a long series of extensive researches. On the other hand, they established that under certain physiological conditions, such as normal childbirth, the number of leucocytes might reach a figure hitherto observed only in connection with severe infectious processes. In 47 healthy working women examined, all 21 to 34 years old, the leucocytes numbered 4000 to 12,500 in 31; to 15,000 in 12, and to 21,330 in 4. These figures did not vary much in individuals. The results were approximately the same in 57 pregnant women examined, but in 63 examined during childbirth, the leucocytes increased in number, in some cases to 30,000. The higher numbers were observed in the cases of severer and more protracted labor, and especially after rupture of the waters. This physiological leucocytosis had nothing to do with absorption of putrefying lochia, etc., as it reached its height with delivery and subsided after expulsion in 113 women examined. The leucocytosis that accompanied mastitis or lochiometra later was comparatively insignificant. In the single case observed of thrombophlebitic puerperal fever the leucocyte count persisted high after expulsion. Putrefaction of the lochia is not sufficient alone to induce leucocytosis. There must be opportunity for extensive absorption.

95. **Success of Pansy Tea in Acne.**—Behrmann has found that a tea or decoction of the viola tricolore has a remarkable curative action in cases of common acne. Mandelin has announced that this herb contains salicylic acid and magnesium tartrate. The action of the heat and of the salicylic acid causes sweating, and excretion through the sebaceous glands is also increased and softened. The acid has also a dissolving effect on the horny plugs in the sebaceous glands of the acne patches. The magnesium tartrate loosens the bowels at the same time, while the antizymotic action of the salicylic acid checks absorption from the intestines. The pansy tea has cured in his experience cases rebellious to all other measures, and its simplicity, cheapness and agreeable taste have rendered it very popular in his practice. It is necessary, however, to have the patients return often to be inspected, as impetigo may develop under a tight collar, as occurred in one of his cases, if the patient is not supervised and the spot disinfected as soon as a pimple appears.

97. **Sarcomata of Femur.**—Jenckel remarks that cases are on record of complete recovery after removal of even periosteal and myelogenic unencapsulated sarcomata of the femur, although they are very rare. When the tumor is in the lower third of the femur high amputation has proved sufficient, without the necessity for exarticulation. Encapsulated myeloid tumors offer an unusually favorable prognosis. Evacuation or removal of the cyst wall is sufficient to cure in these cases. Encapsulated, circumscribed medullary sarcomata usually grow and spread differently from the periosteal or myelogenic variety, consequently when the presumption is in favor of a medullary sarcoma, on account of the slow growth and relative freedom from metastases, comparatively conservative procedures are justified. Out of the 35 sarcomata of the femur operated on at Göttingen, 4 are permanently cured and 6 permanent cures are on record in the literature.

101. **Subcutaneous Rupture of the Intestines After Crushing Injury of the Abdomen.**—Neumann's experience includes 21 cases, all fatal but one. When the force causing the injury extends over a large surface, rupture of the intestine is rare, while it usually accompanies a circumscribed injury. Surgical intervention should be as prompt as possible. It is imperative at once when the subject has been kicked in the abdomen by a horse, but under other circumstances, if there are no signs of injury of a parenchymatous organ or of the mesenteric vessels, the postponement of the operation until the diagnosis is better established seems more justifiable.

105. **Tuberculosis of Pubic Symphysis.**—Herz has observed two cases of this affection. The diagnosis is difficult as the pains appear at a distance.

106. **Fibro-Sarcoma in Brachial Plexus.**—In the case reported by Schrader, a woman, 43 years old, experienced pains in thumb and forefinger and in the back of the left hand, and also in shoulder when the arm was raised. A tumor was palpated in the supraclavicular fossa and pressure on it increased the pains in the hand. The cuts of the case are interesting as it is the unique record of a neuroma in the trunk nerve. It was a large encapsulated fibrosarcoma in the brachial plexus and was easily removed. All pains vanished at once and there has been no recurrence during the eleven months since.

107. **Kappeler's Experiences with Resection of Carcinomatous Stomachs.**—Ten out of the thirty patients operated on were freed from all disturbances and lived in peace, before recurrences developed, for five months to three years. Three of the others are still alive and well, seven to twenty-seven months after the intervention.

108. **Leprosy.**—Hadjimichalis states that there are not more than 200 lepers in Greece. He urges legislation to enforce isolation and to prevent others from arriving from other countries, as he considers the disease contagious, although contagion is difficult. He also believes that lepra is to a certain degree hereditary.

109. **Neuritis in Malaria.**—Triantaphyllides describes five cases which demonstrate that besides the neuritis which occurs in malarial subjects and in which the malaria is merely an adjuvant or predisposing factor, there are cases in which the neuritis is due exclusively to a malarial origin. In one of his patients there was diffuse acute polyneuritis, in another neuritis of the left cubital nerve, in a third disseminated neuritis, in a fourth paresis of all the limbs with severe pains, and in the fifth, acute motor polyneuritis. The patients were all women but one. The malarial origin of the neuritis in these cases was differentiated by the rapid cure on treatment with

quinin. Nearly a dozen cases of malarial neuritis are on record.

111. **Alcohol in Experimental Tuberculosis.**—Gervino relates the results of the protracted administration of small amounts of alcohol to 4 rabbits. Two of them after several months, with 2 control rabbits, were inoculated with tuberculosis. The results confirmed: 1, the increased antitoxic action conferred upon the serum by the alcohol as claimed by Mircoli; 2, a much more pronounced local reaction to the injections, an evident attempt to throw up a rampart against the infection; 3, the retarding action of alcohol on the albuminoid metabolism; 4, the cheering and stimulating effect of alcohol. Mircoli first called attention to the euphoria induced by alcohol as a factor in treating tuberculosis. Maragliano makes a practice of giving his tuberculous patients 50 to 90 c.c. of cognac a day.

120 and 131. **Facilities for Bathing in Finland, Sweden and Norway.**—Romeke devoted six weeks to a trip in these countries to gather material for this article at the request of the editor. He adds a few photographs of some of the bath rooms connected with schools, public bath houses, club natatoria, etc. The arrangements are restricted to shower baths and pails in most places, although some elaborate establishments are to be found in Sweden, with swimming tanks. Rindal in Norway has a typical public bath house. It is a lonely building 24 ft. long by 36 wide, containing four rooms, a large stove, shower baths and pails. Each patron pays 10 ore, about 2.7 cents and children half price. The entire expense was about $270. Women and children have the use of the building from one to four and men and boys the rest of the day and evening. In Finland it is an old established custom for several families to club together and erect a small log bath house convenient of access from the scattered farms. Here the men and women meet in turn for a social time as well as the bath. In the Sydvaranger district there are 20 such bath houses for 32 families in one valley and 56 in the entire district. They have almost all been erected by Finns who have moved into the country from Finland. Wessel gives a cut of a typical Finn "badstue," a log cabin in a waste of snow with a reindeer sledge waiting outside. These bath houses are more numerous the larger the proportion of Finns in the district, but the Norwegians are gradually adopting them more and more.

121. **Insane Asylums in Norway.**—Holboe's communication is principally devoted to the "colonies" connected with the insane asylums, the outlying settlements that relieve the overcrowded institutions. The province of Akershus has 35 of these colonies with a total of 272 inmates. Photographs of the colony at Fet show a wooden cottage surrounded by a stockade 15 feet high, enclosing a yard of about twice the floor space of the cottage. The interior of seven of the colony cottages is divided into cages, the partitions between reaching to the ceiling. The report mentions that there are 89 of these colonies in all, with 644 inmates, of whom 269 require more or less constant confinement.

129. **Report of Beri-Beri Committee.**—Given in full in THE JOURNAL of August 16, p. 388.

130. **Danger of Contagion from Scarlet Fever Convalescents.**—Aaser has had occasion to observe 3800 cases of scarlet fever since 1895, and of this number 79 are reported as having been infected by patients dismissed as cured from the hospitals. The contagion must have occurred from the first to the seventh day after the return of the dismissed patients, in 45 cases, from the eighth to the fourteenth in 22 and between the fifteenth and the thirty-second day in the others. He tabulates the details of the various cases and proclaims that the infection could not be attributed to the scales as the desquamating period had passed before the patients had been dismissed. The long interval before infection occurred and other circumstances have convinced him that infectivity is far more liable to be connected with an abnormal nasopharyngeal secretion than with desquamation. He therefore proclaims that scarlet fever patients should not be dismissed from isolation until careful examination of throat and nose shows that the secretion has ceased, even if the time required is twice that of the ordinary period of isolation. Painting with hydrogen dioxid is an aid in diagnosis as gas bubbles do not form if the mucosa is normal. In his experience local antiseptic measures were not effectual in preventing danger from this source. He concludes that the same rules apply to scarlet fever as to diphtheria. The subjects are liable to infect others so long as the infecting agent lingers in the nose, throat or middle ear. Its presence is disclosed by the abnormal secretion. The question as to whether it occurs in other secretions and excretions has not yet been decided.

131. **Bathing Facilities in the Sydvaranger District.**—See 120 above.

133. **Strychnin in the Treatment of Yellow Fever.**—Ferrari found that strychnin gave better results than any other drug in his experience, combined with digitalis in the formula: 200 gm. of a .5 per cent. infusion of digitalis leaves with 10 mg. of strychnin sulphate and 6 gm. spirits of chloroform. Dose a tablespoonful every two hours. He supplements this by cold baths commencing at body temperature, repeated not oftener than four to six hours. If the urine amounts to less than 800 gm. in the twenty-four hours he applies local revulsion over the kidneys to relieve the congestion. He has found it expedient in some cases to administer the strychnin in hypodermic injections in doses of 10 to 20 mg. a day for three or four days, averaging 5 to 10 mg. He injects 5 mg. in children over 10. In the first stage he gives fluid magnesia with the injections of strychnin, and possibly enemata and epigastric revulsion with tincture of iodin. His mortality has been 23.14 per cent., that is, 59 deaths in 308 patients treated with strychnin; 171 recovered. The others reached the hospital moribund and died in less than two days; 29 of the cured patients exhibited black vomit, 15 hemorrhage and 4 anuria for twenty-four hours.

135. **Etiology of Yellow Fever.**—De Lacerda is director of the laboratory of biology at Rio and has been studying for years on the etiology of yellow fever. He now announces that he has found a specific ferment in the kidneys, blood, stomach and vomit of yellow fever patients, which he considers the causal agent of the disease. It usually occurs in the form of hyaline cells and induces an intense fermentation in a neutral medium with abundant production of acids. Animals injected with this fermented fluid died in less than twenty-four hours with vomiting, sanguinolent dejecta and albuminuria or anuria. The mucosa of the stomach and the liver displayed marked congestion. Other experiences showed that the liver is the organ that develops most virulence in yellow fever. This virulence resists a temperature of 223 F. maintained for four hours. He has watched the evolution and rupture of the ferment cells and has witnessed the same phenomena in mosquitoes fed with the blood of animals inoculated with the cells, as late as fifty-two hours after their ingestion. He believes that these researches indicate that the acid fermentation which is the essence of yellow fever should be logically treated by alkalines.

141. **The Diazo in Tropical Diseases.**—Austregesilo concludes from his research on the diazo-reaction in various diseases that it has no diagnostic nor prognostic value in any except typhoid fever and tuberculosis. In bubonic plague, yellow fever and other tropical diseases it has very little if any significance, either in the pyretic or apyretic forms.

New Patents.

Patents of interest to physicians, etc., August 5 and 12.

706371. Stretcher, Francis X. Aigner, Jersey City, N. J.
706015. Inhaler, James F. Breen, Dayton, Ohio.
706169. Antiseptic telephone mouthpiece, Wm. M. English and C. A. Burns, San Francisco.
706073. Machine for cutting or shaving ice, Fisher H. Lippincott, Philadelphia.
706457. Suspending device for catamenial bandages, Edna L. Scott, Portland, Me.
706358. Apparatus for administering anesthetics, Charles K. Teter, Upper Sandusky, Ohio.
706482. Thermocautery, Louis Wirsching, New York.
706715. Abdominal supporting bandage, Mildred T. Barnett, San Francisco.
706890. Machine for mixing and kneading dough. Frederick Brackett, Baltimore.

706732. Applicator, Allen W. Ellington, Los Angeles.
706975. Device for protecting the ear drum, Frank D. Macbeth, Baltimore.
706777. Pellet or tablet-making apparatus, Emerich Petranyi, Elizabeth, N. J.
706778. Medicated tampon, Edmund M. Pond, Rutland, Vt.
706602. Therapeutic electrical apparatus, Ira E. Shaffer, Mount Vernon, N. Y.
707031. Curette, Charles W. Spaulding, Carroll, Iowa.
36000. Design, nebulizer support, Wm. and J. Boekel, Philadelphia.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., Aug. 7 to 13, 1902, inclusive:

George E. Bushnell, major and surgeon, U. S. A., member of a board at Fort Logan, Colo., to examine officers of the Army for promotion.

Walter Cox, lieutenant and asst.-surgeon, U. S. A., leave of absence extended.

Merritte W. Ireland, captain and asst.-surgeon, U. S. A., in addition to his present duties will assume temporary charge of the medical supply depot at St. Louis until the arrival at that place of Major Harry O. Perley, surgeon, U. S. A.

Jose Lugo-Vina, captain and asst.-surgeon, Porto Rico Provisional Regiment of Infantry, leave of absence on surgeon's certificates of disability extended one month.

Charles E. Marrow, lieutenant and asst.-surgeon, U. S. A., leave of absence from the Department of California extended one month.

James C. Merrill, major and surgeon, U. S. A., leave of absence for four months granted on account of sickness.

Harry O. Perley, major and surgeon, U. S. A., from Plattsburg Barracks, N. Y., to St. Louis, Mo., to assume charge of the medical supply depot in that city and to relieve Captain Merritte W. Ireland, asst.-surgeon, U. S. A.

Joseph Pinquard, contract surgeon, now at San Francisco, is relieved from further duty in the Division of the Philippines and will proceed to Fort Leavenworth, Kans., for duty at that post.

E. G. Seibert, contract surgeon, leave of absence for seventeen days granted, to take effect Aug. 18, 1902.

C. A. Sturtevant, contract surgeon, leave of absence to include Aug. 31, 1902, granted.

Philip G. Wales, captain and asst.-surgeon, U. S. A., member of a board at Fort Logan, Colo., to examine officers of the Army for promotion.

William H. Walker, contract surgeon, now at Fort Harrison, Mont., is relieved from further duty in the Division of the Philippines and will proceed to Camp Thomas, Ga., for duty at that post.

Marshall W. Wood, major and surgeon, U. S. A., having been found by an Army retiring board incapacitated for active service on account of disability incident thereto, his retirement is announced by the Acting Secretary of War, Aug. 12, 1902.

In addition to the above orders the following medical officers were appointed members of boards, convened at the places stated, to examine certain candidates from civil life for appointment as second lieutenants in the Army:

At Fort Ethan Allen, Vt., Major Marlborough C. Wyeth, surgeon, and Lieut. Charles F. Morse, asst.-surgeon, U. S. A.

At Fort Columbus, N. Y., Major William H. Corbusier, surgeon, and Lieut. Robert H. Pierson, asst.-surgeon, U. S. A.

At Fort Monroe, Va., Major Frank R. Keefer, surgeon, and Lieut. Henry Page, asst.-surgeon, U. S. A.

At Fort Snelling, Minn., Lieut.-Col. Blair D. Taylor, deputy surgeon-general, and Lieut. Thomas Devereux, asst.-surgeon, U. S. A.

At Fort Leavenworth, Kans., Major Henry P. Birmingham, surgeon, and Lieut. David Baker, asst.-surgeon, U. S. A.

At Fort Sam Houston, Tex., Major Charles F. Mason, surgeon, U. S. A., and Contract Surgeon George L. Cable.

At Fort McPherson, Ga., Lieuts. Reynold M. Kirby Smith and Haywood S. Hansell, asst.-surgeons, U. S. A.

At Columbus Barracks, Ohio, Major Guy L. Edie, surgeon, and Lieut. James W. Van Dusen, asst.-surgeon, U. S. A.

At Fort Sheridan, Ill., Major Frank J. Ives, surgeon, U. S. A., and Contract Surgeon Charles F. Smith.

At Fort Logan, Colo., Major George E. Bushnell, surgeon, U. S. A., and Contract Surgeon Alva R. Hull.

At the Presidio, San Francisco, Major Henry S. Kilbourne, surgeon, and Lieut. Henry S. Greenleaf, asst.-surgeon, U. S. A.

At Vancouver Barracks, Wash., Major Rudolph G. Ebert, surgeon, and Lieut. Harry L. Gilchrist, asst.-surgeon, U. S. A.

At San Juan, Porto Rico, Major Euclid B. Frick, surgeon, U. S. A., and Contract Surgeon James C. Dougherty.

Navy Changes.

Changes in the Medical Corps of the Navy for the week ending August 16:

P. A. Surgeon F. L. Pleadwell, detached from the *Sylph*, and ordered to the *Kearsarge*.

Asst.-Surgeon R. O. Marcour, detached from the U. S. S. *Abarenda*, and ordered home to wait orders.

P. A. Surgeon D. H. Morgan, detached from the U. S. S. *Philadelphia*, and ordered to the U. S. S. *Boston*.

P. A. Surgeon H. D. Wilson, detached from the Marine Brigade, Cavite, and ordered to duty at Olongapo, P. I.

Asst.-Surgeon H. A. Dunn, detached from the Naval Hospital, Yokohama, Japan, and ordered to duty with the Marine Brigade, Cavite, P. I.

Asst.-Surgeon H. E. Odell, detached from duty at Olongapo, P. I. and ordered to the *Solace*.

Asst.-Surgeon T. M. Lippitt, detached from the Washington Yard, September 8, ordered to be examined by retiring board and thence home and to wait orders.

Asst.-Surgeon R. B. Williams, detached from the *Kearsarge*, and ordered to the Naval Hospital, Newport, R. I., for treatment.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended Aug. 14, 1902:

Surgeon A. H. Glennan, granted leave of absence for one month from September 1.

Asst. Surgeon-General L. L. Williams, granted leave of absence for fifteen days from September 1.

P. A. Surgeon A. C. Smith, Bureau letter of June 9, 1902, granting him leave of absence for thirty days from July 10, 1902, amended so that said leave shall be for twenty-seven days only from July 10.

P. A. Surgeon Hill Hastings, granted leave of absence for one month from September 3.

A. A. Surgeon H. J. Hamilton, granted leave of absence for three days.

BOARD CONVENED.

Board convened at Washington, D. C., Aug. 11, 1902, for the physical examination of an officer of the Revenue Cutter Service. Detail for the board: Asst. Surgeon-General G. T. Vaughan, chairman; Asst.-Surgeon B. S. Warren, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Aug. 16, 1902:

SMALLPOX—UNITED STATES.

California: Los Angeles, July 26-Aug. 2, 2 cases; San Francisco, July 27-Aug. 3, 6 cases.
Colorado: Denver, July 26-Aug. 2, 1 case.
District of Columbia: Washington, Aug. 2-9, 4 cases.
Florida: Jacksonville, Aug. 2-9, 2 cases.
Illinois: Chicago, Aug. 2-9, 3 cases.
Indiana: Indianapolis, Aug. 2-9, 2 cases.
Iowa: Ottumwa, July 5-Aug. 2, 8 cases.
Kentucky: Covington, Aug. 2-9, 3 cases.
Maine: Portland, Aug. 2-9, 1 case.
Massachusetts: Boston, Aug. 2-9, 10 cases, 1 death; Everett, Aug. 2-9, 2 cases, 1 death; Lowell, Aug. 2-9, 1 case, 1 death; Somerville, Aug. 2-9, 6 cases.
Michigan: Detroit, Aug. 2-9, 2 cases.
Missouri: St. Joseph, July 26-Aug. 2, 17 cases; St. Louis, Aug. 3-10, 4 cases.
Montana: Butte, July 27-Aug. 3, 1 case.
Nebraska: Omaha, Aug. 2-9, 3 cases.
New Hampshire: Nashua, Aug. 1-8, 1 case.
New Jersey: Elizabeth, July 5-Aug. 9, 1 case; Hudson county, Jersey City included, Aug. 3-10, 1 case, 1 death; Newark, Aug. 2-9, 6 cases, 3 deaths.
New York: New York, Aug. 2-9, 5 cases, 2 deaths.
Ohio: Cincinnati, Aug. 1-8, 4 cases; Cleveland, Aug. 2-9, 42 cases, 5 deaths; Toledo, July 26-Aug. 2, 1 case.
Pennsylvania: Altoona, Aug. 2-9, 3 cases; Johnstown, Aug. 4-11, 5 cases; McKeesport, Aug. 2-9, 3 cases; Philadelphia, Aug. 2-9, 4 cases, 1 death; Pittsburg, Aug. 2-9, 18 cases, 5 deaths.
Utah: Salt Lake City, July 26-Aug. 2, 2 cases.

SMALLPOX—INSULAR.

Philippine Islands: Manila, June 11-21, 2 cases.

SMALLPOX—FOREIGN.

Argentina: Buenos Ayres, May 1-31, 10 cases.
Austria: Prague, July 19-26, 1 case.
Belgium: Antwerp, July 19-26, 4 cases, 1 death.
Brazil: Pernambuco, June 1-30, 35 deaths.
Ceylon: Colombo, June 28-July 5, 1 death.
China: Hongkong, June 14-July 5, 3 cases, 2 deaths.
Great Britain: Dundee, July 12-19, 1 case; Liverpool, July 26-Aug. 2, 6 cases, 2 deaths; London, July 12-19, 48 cases, 15 deaths; London, July 19-26, 23 cases, 4 deaths.
India: Bombay, July 8-15, 3 deaths; Calcutta, July 5-12, 1 death; Madras, July 5-11, 1 death.
Italy: Naples, July 12-26, 2 cases; Palermo, July 12-26, 11 cases, 2 deaths.
Netherlands: Rotterdam, July 26-Aug. 2, 1 case.
Mexico: City of Mexico, July 19-Aug. 3, 4 cases, 4 deaths.
Russia: Moscow, July 12-19, 13 cases, 1 death; Odessa, July 19-26, 1 case; St. Petersburg, July 12-19, 9 cases; Warsaw, July 12-19, 3 deaths.
Spain: Corunna, July 1-31, 1 death; Valencia, July 16-31, 1 death.
Uruguay: Montevideo, June 30-July 7, 21 cases.

YELLOW FEVER.

Brazil: Pernambuco, June 1-30, 1 death.
Colombia: Panama, July 21-Aug. 4, 10 cases, 3 deaths.
Mexico: Coatzacoalcos, July 26-Aug. 2, 1 case; Merida, to Aug. 5, 7 cases, 2 deaths; Progreso, to Aug. 5, 3 cases; vicinity of Progreso, July 27, 1 death; Vera Cruz, July 26-Aug. 9, 33 cases, 20 deaths.

CHOLERA—INSULAR.

Philippine Islands: Manila, June 8-21, 277 cases, 207 deaths; Provinces, March 20-June 21, 5,892 cases, 4,268 deaths.

CHOLERA—FOREIGN.

China: Amoy, June 7-28, 275 cases estimated; Hongkong, June 21-July 5, 26 cases, 17 deaths; Tientsin, June 21-30, 222 cases, 197 deaths.
Egypt: Moucha, July 15-23, 227 cases, 162 deaths.
India: Bombay, July 8-15, 2 deaths; Calcutta, July 5-12, 31 deaths; Madras, July 5-11, 1 death.
Japan: Nagasaki, July 12-20, 11 cases, 9 deaths.
Java: Batavia, June 7-July 5, 92 cases, 77 deaths.

PLAGUE—INSULAR.

Hawaiian Islands: Honolulu, July 28, 1 death.
Philippine Islands: Manila, June 3-21, 1 case, 1 death.

PLAGUE—FOREIGN.

China: Hongkong, June 14-July 5, 125 cases, 124 deaths.
India: Bombay, July 8-15, 22 deaths; Calcutta, July 5-12, 20 deaths.
Madagascar: Majunga, June 8-22, 37 deaths.

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Philadelphia, New York, Chicago

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

61 Market Street : : Chicago, Ill.

Cable Address: "Medic, Chicago"

Subscription price: Five dollars per annum in advance

Postage in the United States and Canada, Cuba, Mexico, Hawaii, Guam, Porto Rico, and the Philippines, free; foreign postage, $2.50. Subscriptions may commence at any time. Volumes begin with the first issue of January and of July.

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